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STORM WATER MANAGEMENT MODEL (SWMM) BIBLIOGRAPHY

by

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Cooperative Agreement CR-811607

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16. ABSTRACT Available literature sources were reviewed to locate references to the theory, documentation, use, or other activities related to the EPA Storm Water Management Model (SWMM). Listed in this annotated bibliography are 237 such citations, along with keywords and brief abstracts. The references also are indexed by an alphabetical listing of keywords. The bibliography represents the best source of information on case studies and model documentation available to the SWMM user:		
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FOREWORD

As environmental controls become more costly to implement and the penalties of judgment errors become more severe, environmental quality management requires more efficient analytical tools based on greater knowledge of the environmental phenomena to be managed. As part of this Laboratory's research on the occurrence, movement, transformation, impact, and control of environmental contaminants, the Assessment Branch develops management or engineering tools to help pollution control officials achieve water quality goals.

Management of urban stormwater quantity and quality has been enhanced by the development of sophisticated digital computer models for the simulation of relevant urban hydrologic processes. The EPA Storm Water Management Model (SWMM) has been a leading model of its type since its development in 1971. This report documents the large body of available literature associated with the use of SWMM. It is intended to aid users of SWMM and other hydrologic models in locating information on theory, documentation, parameter estimation, and case studies.

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Director
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ABSTRACT

Available literature sources have been reviewed to locate any references to the theory, documentation, use or other activities related to the EPA Storm Water Managment Model, SWMM; 237 such citations are listed in this annotated bibliography, including keywords and brief abstracts. The references are also indexed by an alphabetical listing of keywords. A few additional recent references are also included in a separate listing. The bibliography represents the best source of information on case studies and model documentation available to the SWMM user.

This report was submitted in partial fulfillment of Cooperative Agreement No. CR-811607 by the University of Florida, under the sponsorship of the U.S. Environmental Protection Agency. The report covers the period May 1984 to September 1985, and work was completed as of September 1985.

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ACKNOWLEDGMENTS

The authors gratefully acknowledge the help of EPA colleagues during several years of support of work on the SWMM model, as well as the help of users of the model who have graciously supplied the authors with copies of their results. Mr. Michael Harrison at the University of Florida was instrumental in establishing the initial version of the bibliography.

SECTION 1

INTRODUCTION

BACKGROUND

The EPA Storm Water Management Model, SWMM, developed in 1969-71, was one of the first of a growing collection of sophisticated models for aid in analysis of stormwater quantity and quality problems. It is by no means the only one, but according to a recent report issued by the U.S. Office of Technology Assessment (B-4):

"Its reliability and widespread availability have made SWMM the most widely used model of its type in the United State and Canada, and have been important in increasing the use of models by engineers and planners. The SWMM User's Group has been instrumental in achieving the widespread dissemination and acceptance enjoyed by this important modeling tool."

Thus, the program is not only important in its own right, but has also served as an example for developers of other models. It is, in fact, the de facto standard against which most newer models are compared (76). There are many examples in the literature (and in recent advertisements for microcomputer programs) in which a new model is validated against SWMM. (Measured data would be preferable.)

The original model was prepared during 1969-71 by a joint venture of three contractors: Metcalf and Eddy, Inc. (Palo Alto), the University of Florida (Gainesville), and Water Resources Engineers, Inc. (Walnut Creek); the latter contractor is now a part of Camp, Dresser and McKee. Since 1972 SWMM has been maintained and updated through efforts of all three original contractors, but especially through EPA-sponsored contracts for this purpose at the University of Florida. This activity has benefited greatly from feedback from a large number of model users. In this manner, errors have been corrected and needed improvements provided that might otherwise not have been recognized.

The program is very widely used and well known, to the point of citations in popular hydrology texts (e.g., B-5). A rough estimate of active users, based on mailing lists and user contacts, would be about 300 in the U.S., with an additional 100 in Canada and another 100 overseas. ("Active" means having used the program at least once since 1981, the release date of Version III.)

This report focuses upon literature related only to SWMM, in the form of reports, journal articles, conference proceedings, etc. In the process of compiling the bibliography, a number of other models are mentioned, but this bibliography does not attempt to document the use of other models. Detailed

comparisons and reviews of several models for urban hydrology are available elsewhere, e.g., 20, 80, A-3, B-1, B-2, B-3, B-6.

THE EPA STORMWATER AND WATER QUALITY MODEL USER'S GROUP

Formerly the SWMM User's Group and established in 1973, the group plays a key roll in the dissemination of information about SWMM and several other models and modeling topics. It is operated by the EPA Center for Water Quality Modeling in Athens, Georgia, which is generally in charge of water quality model development, dissemination and support within the agency (15). The current (1985) name and address of the person responsible for the Center is:

Mr. Thomas O. Barnwell, Jr.
Center for Water Quality Modeling
Environmental Protection Agency
College Station Road
Athens, Georgia 30613

(404) 546-3175

The Center publishes a newsletter on an approximate semi-annual basis, and is responsible for dissemination of several water quality models, including SWMM, HSPF, QUAL-II, ARM, WASP, and EXAMS. The Center also sponsors occasional workshops and seminars on the various models, which are publicized by brochures and notices in journals.

The Center's most important function has perhaps been to sponsor meetings of the User's Group, at which papers on any topic related to hydrologic modeling are presented and later published in the form of proceedings. The meetings are co-sponsored by Environment Canada and the Ontario Ministry of the Environment, and are usually held semi-annually, once in the U.S. and once in Canada. The papers often represent the most useful kind of modeling aid because of their informal nature and unrestricted content; this bibliography contains many citations from the proceedings. The other valuable function of the meetings is direct contact among the model users.

All model users are invited to contact the Center to have their name placed on the mailing list for the newsletter and to receive notification of the User's Group meetings. It is primarily through this User's Group that such invaluable feedback has been provided for the maintenance and improvement of SWMM.

BIBLIOGRAPHY FORMAT

The bibliography and sources of information are described in Section 2 of this report. There are three reference lists. The first is the bibliography itself, consisting of 237 entries. It was developed during the early portion of 1985; a small number of additional SWMM-related references are contained in a supplementary list in Appendix A. Since they were identified late in the

search, they are not included in the index of keywords contained in Section 2. Finally, there is a list of supplementary references to the text of this report contained in Appendix B. Thus, references in the text have been identified by number if from the bibliography given in Section 2, or by A-1, B-1 etc. if from one of the two appendices.

SECTION 2

SWMM BIBLIOGRAPHY

INFORMATION SOURCES

Entries to the bibliography were obtained from several sources: computer searches, individual review of journal indexes, review of EPA and other in-house reports, review of Florida Water Resources Research Center library reports, review of conference proceedings, etc. In spite of the best efforts of the authors of this report, there are undoubtedly still more citations which have been overlooked, for which the authors apologize. It is especially difficult to be cognizant of all the relevant foreign literature. Readers are invited to notify the report authors of references that should be included in updated editions of this bibliography.

SWMM USER'S MANUALS AND PROGRAM DOCUMENTATION

Each of the three original contractors worked on separate blocks of the model and contributed to the four-volume set of original documentation (147, 148, 149, 150). Since the original model was released in 1971, there have been a Version II User's Manual (82) and related documentation (69), unpublished documentation for an interim 1977 release, and the current two-volume set of documentation for Version III (83, 191). The latter contains both instructions for use of the program and documentation of the theory. Of the original documentation, the User's Manual (149) and Program Listing (150) are of little present usefulness, both having been superseded. However, many model techniques are still documented in the original Final Report (147), and the volume on case studies (148) still contains useful insights. Unfortunately, the current documentation does not contain case studies. One of the primary objectives of this bibliography is to provide references to such information.

A strength of SWMM has been the exhaustive study it is received from several groups. In particular, useful supplements to the current User's Manuals (83, 191) are workshop proceedings prepared by the University of Massachusetts (41) and user's manuals prepared for the Canadian version of SWMM (179, 180, 181).

USER'S GROUP PROCEEDINGS

The Storm and Water Quality Model User's Group meetings proceedings have been published in report form since 1978 by various groups (Table 1). Since

TABLE 1. SOURCES OF USER'S GROUP MEETING PROCEEDINGS

Date	Meeting Location	Report No.	NTIS No.	Source*
May 1978	Ottawa, ON	EPA-600/9-78-019	PB-285993/2BE	NTIS
Nov. 1978	Annapolis, MD	EPA-600/9-79-003	PB-290742/6BE	NTIS
May 1979	Montreal, PQ	EPA-600/9-79-026	PB80-105663	NTIS
Jan. 1980	Gainesville, FL	EPA-600/9-80-017	PB80-177876	NTIS
June 1980	Toronto, ON	EPA-600/9-80-064	PB81-173858	NTIS
Jan. 1981	Austin, TX	CHI-R83		1
Sep. 1981	Niagara Falls, ON	CHI-R81		1
Mar. 1982	Washington, DC	EPA-600/9-82-015	PB83-145540	NTIS
Oct. 1982	Ottawa, ON			2
Jan. 1983	Gainesville, FL	EPA-600/9-83-015	PB84-118454	NTIS
Sep. 1983	Montreal, PQ	GREMU 83/02		3
Apr. 1984	Detroit, MI	EPA-600/9-85-003	PB85-168003/AS	CERI
Sep. 1984	Burlington, ON	CHI-R128		1
Jan. 1985	Gainesville, FL	EPA/600/9-85/016	PB85-228302/AS	CERI

*Sources: See continuation on following page.

Sources for reports of Table 1.

Note: Prices are current as of September 1985 and subject to change.

NTIS (microfiche, \$4.50; hardcopy, approximately \$25)

National Technical Information Center
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650

CERI (No charge while supplies last, then available from NTIS)

Center for Environmental Research Information
Environmental Protection Agency
Cincinnati, OH 45268
(513) 569-7562

1. (Available for US \$25, payable to Computational Hydraulics, Inc.)

Dr. William James
Computational Hydraulics Group
Dept. of Civil Engineering
McMaster University
Hamilton, Ontario L8S 4L7
(416) 527-6944

2. (Available for US \$40, payable to IMPSWM)

Dr. Paul Wisner
Dept. of Civil Engineering
University of Ottawa
Ottawa, Ontario K1N 9B4
(613) 231-7022

3. (Available for US \$30, payable to Ecole Polytechnique)

Dr. Patrick Beron
Groupe de Rescherches su L'eau en Mileu Urbain
Department de Genie Civil
Ecole Polytechnique de Montreal
Case Postale 6097, Succursale 'A'
Montreal, Quebec H3C 3A7
(514) 340-4802

they often contain the most specific and useful references, the report details are provided in this table. As copies of recent proceedings are exhausted at EPA offices, they will remain available from the NTIS, as for the older proceedings.

BIBLIOGRAPHY LISTING

The bibliography has been compiled using Bookends (copyrighted) software for bibliographic databases on Apple computers. Although it is somewhat awkward for large files, the data entry and formatting capabilities are very good. Persons desiring a copy of the bibliography on a diskette may obtain it at cost from the report authors, although a copy of Bookends would be necessary to make maximum usefulness of it for searches, etc.

Each citation contains a list of keywords and a very brief abstract. These have been compiled on an ad hoc basis from the viewpoint of optimal usefulness for the person interested in SWMM. Following the bibliography, the keywords are listed in Table 2, which also serves as a subject index to the references.

The keyword "SWMM" has the most citations! It is included for every reference that discusses the model (except for a few isolated references to just the RECEIV Block). It is not included with all references, since some do not discuss the model directly, but rather bear some peripheral relationship to SWMM modeling. Keywords in all capital letters are either models (e.g., SWMM, HSPF, HYMO) or else individual blocks of SWMM (e.g., RUNOFF, TRANSPORT, EXTRAN, STORAGE-TREATMENT, RECEIV). Identical words not capitalized refer to the general topic. Hence, one can search the list of keywords for references related to the use of a specific block of SWMM. Ultimately it may be easiest simply to review the complete list to find useful citations; the keyword index may be most useful only as a quick reference.

The 237-entry bibliography and Table 2 conclude this section.

1. Abbott, J., "Testing of Several Runoff Models on an Urban Watershed," Technical Memorandum No. 34, ASCE Urban Water Resources Research Program, ASCE, New York, NY, October 1978.
KEY: Model comparison/SWMM/STORM/HSPF/HEC-1/MITCAT/SSARR/Castro Valley, CA/Continuous simulation
ABSTR: Comparison of SWMM version II with other models.
2. Ahmad, M., "Stormwater Modelling Applications in the City of Edmonton," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876), USEPA, Washington, DC, March 1980, 223-242.
KEY: Edmonton, Alberta/SWMM/RUNOFF/EXTRAN/ILLUDAS/HYMO/STORM/Combined sewer/Controls/Costs/Quality
ABSTR: General description of ongoing pollution control activities in Edmonton.
3. Ahmad, M., "Methodology for 'Lumped' SWMM Modelling," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, June 19-20, 1980, EPA-600/9-80-064, (NTIS PB81-173858), USEPA, Athens, GA, December 1980, 64-79.
KEY: Theory/SWMM/RUNOFF/Subcatchment aggregation/Edmonton, Alberta
ABSTR: A systematic methodology is presented for lumping or aggregating urban drainage areas when using SWMM. As a part of the simplified methodology, the concept of equivalent gutter was introduced in RUNOFF block simulation to compensate for the eliminated conduit storage existing within the lumped catchment.
4. Ahmad, M., Vatagodakumbura, S. and Choudhry, R., "Development and Application of Edmonton Sanitary Trunk System Model," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 104-131.
KEY: Edmonton, Alberta/Surcharging/SWMM/EXTRAN/Dry-weather flow
ABSTR: SWMM-EXTRAN was applied for hydraulic simulation and a new model (FLOWGEN) was developed for generation of dry-weather flow in the sanitary sewer system. Alternatives are compared and costs are given.
5. Aldrich, J.A. and Huber, W.C., "Discussion of 'Transient Mixed-Flow Models for Storm Sewers' by C.C.S. Song, J.A. Cardle and K.S. Leung," Journal of Hydraulic Engineering, ASCE, Vol. 111, No. 3, March 1985, 555-557.
KEY: Model comparison/SWMM/EXTRAN/Case studies
ABSTR: Discussion listing applications of EXTRAN
6. Aldrich, J.A. and Roesner, L.A., "An Improved Surge Computation in Extran," Proceedings of Stormwater and Water Quality Management Modeling Users Group Meeting, March 25-26, 1982, EPA-600/9-82-015 (NTIS PB83-145540), USEPA, Athens, GA, August 1982, 179-190.
KEY: Theory/EXTRAN/Documentation/Surcharging/Flow routing
ABSTR: Program modifications to EXTRAN are described to improve the surge computations.

7. Alley, W.M., "An Examination of the Storm Water Management Model (SWMM) Surface-Runoff-Quality Algorithms," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876), USEPA, Washington, DC, March 1980, 93-110.
KEY: Theory/RUNOFF/SWMM/Buildup/Washoff/Quality
ABSTR: Suggested modifications to SWMM Runoff block quality algorithms.

8. Alley, W.M., Ellis, F.W. and Sutherland, R.C., "Toward A More Deterministic Urban Runoff Quality Model," Proceedings, International Symposium on Urban Storm Runoff, University of Kentucky, Lexington, July 1980, 171-182.
KEY: SWMM/STORM/Buildup/Washoff/Quality/Sediment
ABSTR: Analysis of original SWMM buildup and washoff parameters, with suggestions for changes, especially for sediment.

9. Alvarado, L.C., Gooding, B. and Geldof, C., "Calibration Strategies for SWMM Modelling of a Combined Sewer System," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 36-50.
KEY: Hartford, CT/RUNOFF/SWMM/Combined sewer/Calibration/Urban runoff data
ABSTR: SWMM application in 5 combined sewer areas.

10. Ambrose, R.B., Jr. and Prather, T.L., "Linkage of RECEIV Hydrodynamics with Dynamic Estuary Model Water Quality," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, January 19-20, 1981, Austin, TX, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, January 1981, 199-221.
KEY: Washington, DC/RECEIV/DEM/Potomac Estuary/Theory
ABSTR: Combination of better RECEIV hydrodynamics with better DEM quality routines.

11. Ammon, D.C., "Urban Stormwater Pollutant Buildup and Washoff Relationships," ME Thesis, Dept. of Environmental Engineering Sciences, University of Florida, Gainesville, 1979.
KEY: SWMM/Quality/Buildup/Washoff/RUNOFF/Theory/Documentation
ABSTR: Describes basis of quality algorithms in SWMM version III. Literature review.

12. Anderson, J.A., Harlow, C.D., Baranec, J. and Anderson, H.M., "Combined Sewer Overflow Modelling in the Detroit 201 Study Using SWMM," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, January 19-20, 1981, Austin, TX, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, January 1981, 35-55.
KEY: Detroit, MI/SWMM/RUNOFF/TRANSPORT/Combined sewer/Controls/Case study/Waste load allocation
ABSTR: Major application of SWMM for pollution control (EPA 201 study).

13. Anderson, J.C., "Combined Sewer System Analysis Using STORM and SWMM for the City of Cornwall," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, June 19-20, 1980, EPA-600/9-80-064 (NTIS PB81-173858), USEPA, Athens, GA, December 1980, 1-22.
KEY: Cornwall, Ontario/Combined sewer/SWMM/EXTRAN/STORM/Storm water/Continuous simulation/Controls
ABSTR: Cornwall, Ontario has problems with wet weather overflow. High bacteria levels detected at swimming areas along St. Lawrence River. STORM was used to screen a number of control alternatives, and develop statistics with respect to system operation for various levels of both storage and treatment capacities. Subsequently SWMM was used to assess selected control alternatives under individual event operations.
14. Ashmala, A. and Ahmad, M., "Evaluation of Relief Alternatives for Combined Sewer Systems," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, and McMaster University, Hamilton, Ontario, L8S 4L7, September 1981, 427-454.
KEY: Edmonton, Alberta/Combined sewer/EXTRAN/SWMM/Case study/Controls/Costs
ABSTR: Use of EXTRAN to study relief for basement flooding.
15. Barnwell, T.O., Jr., "EPA'S Center for Water Quality Modeling," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 2, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 463-466.
KEY: Dissemination/EPA/Model comparison/Documentation/Model maintenance
ABSTR: Describes EPA's water quality models.
16. Bennerstedt, K. and Brattberg, G., "Effects on Lake Malaren from Combined Sewer Overflow," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 3, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 771-779.
KEY: SWMM/EXTRAN/Combined sewer/Lake Malern, Sweden
ABSTR: Extran application.
17. Bingham, D.R. and Moore, R.A., "Dynamic Modeling Used to Develop Waste Load Allocations (Savannah, GA)," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, L8S 4L7, September 1981, 159-174.
KEY: Savannah, GA/Waste load allocation/RUNOFF/SWMM/Receiving water/Controls
ABSTR: SWMM is coupled to the MIT receiving water model to study the impact of controls.

18. Bonuccelli, H.A., Hartigan, J.P. and Biggers, D.F., "Computer Modeling for Watershed Management in Northern Virginia," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876), USEPA, Washington, DC,, March 1980, 17-40.
KEY: Washington, DC/Urban drainage/STORM/SWMM/EXTRAN/Flood control/Four Mile Run, VA/Occoquan River Basin, VA/HSPF/BMP
ABSTR: Description of a comprehensive water quantity and quality study in the Occoquan basin. Flood study using STORM and EXTRAN, and quality study using HSPF (actually HSP and NPS).
19. Boregowda, S., "Modelling Stormwater Pollutants in Hamilton, Canada," Ph.D. Thesis, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, September 1984.
KEY: SWMM/Quality/Buildup/Washoff/Hamilton, Ontario/Urban runoff data/RUNOFF
ABSTR: Modifications to the SWMM quality algorithms in the Runoff Block.
20. Brandstetter, A., "Assessment of Mathematical Models for Storm and Combined Sewer Management," EPA-600/2-76-175a (NTIS PB-259597), USEPA, Cincinnati, OH, August 1976.
KEY: Model comparison/SWMM/Theory/Flow routing
ABSTR: Comparison of SWMM and several other urban runoff models. Still a good discussion of theory of current models.
21. Brandstetter, A., Field, R. and Torno, H.C., "Evaluation of Mathematical Models for the Simulation of Time-Varying Runoff and Water Quality in Storm and Combined Sewerage Systems," Proceedings of EPA Conference on Environmental Modeling and Simulation, W.R. Ott, ed., EPA-600/9-76-016 (NTIS PB-257142), USEPA, Washington, DC, July 1976, 548-552.
KEY: Model comparison/SWMM
ABSTR: Summary of model comparisons for 24 urban runoff models.
22. Breic, C., "Application of STORM to Assess the Impact of an Urbanizing Area," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, May 4-5, 1978, EPA-600/9-78-019 (NTIS PB-285993/2BE), USEPA, Washington, DC, July 1978, 85-124.
KEY: Ottawa, Ontario/Planning/STORM/Continuous simulation/Controls/Quality/Rideau River/SWMM
ABSTR: Overall pollution control study is described. Loadings resulting from various models, including SWMM, are compared.
23. Brown, R.G., "Relationship Between Quantity and Quality of Storm Runoff and Various Watershed Characteristics in Minnesota, USA," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 3, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 791-799.
KEY: Quality/Loadings/Minnesota/Data

ABSTR: Water quality data used to develop loadings.

24. Camp, Dresser and McKee Inc., "MDC Dorchester Bay CSO Project, Interim Submittal, Chapter X," Report to the Boston Metropolitan District Commission, August 1979.
KEY: SWMM/EXTRAN/Combined sewer/Boston, MA/Case study
ABSTR: Application of EXTRAN in Boston
25. Camp, Dresser and McKee Inc., "Interim Summary Report on Combined Sewer Overflows, Phase I," Report to the City of New Bedford, MA, December 1983.
KEY: SWMM/EXTRAN/Combined sewer/New Bedford, MA/Case Study
ABSTR: Application of EXTRAN in New Bedford.
26. Cermola, J.A., DeCarli, S., Sachdev, D.R. and El-Baroudi, H.M., "SWMM Application to Combined Sewerage in New Haven," Journal of the Environmental Engineering Div., ASCE, Vol. 105, No. EE6, December 1979, 1035-1048.
KEY: SWMM/RUNOFF/TRANSPORT/Combined sewer/New Haven, CT/Quality/Data/Case study
ABSTR: SWMM was calibrated to predict runoff flows in the central portion of the city of New Haven, Connecticut. Problems were encountered in the quality calibration.
27. Cermola, J.A., DeCarli, S., Sachdev, D.R. and El-Baroudi, H.M., "SWMM Application to Combined Sewerage in New Haven," Preprint No. 3347, ASCE Convention and Exposition, Chicago, ASCE, New York, NY, October 1978.
KEY: SWMM/RUNOFF/TRANSPORT/Combined sewer/New Haven, CT/Case study/Quality
ABSTR: Application of SWMM version II to combined sewered areas in New Haven.
28. Chou, I.B., "Calibration of the RECEIV Model in a Well Mixed Tidal Estuary Using the Equilibrium Procedure," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, L8S 4L7, September 1981, 175-194.
KEY: Pt. Elizabeth, NJ/Waste load allocation/RECEIV/SWMM/Calibration/Salinity
ABSTR: RECEIV is calibrated against salinity data.
29. Clarke, W.G., Knowles, W.L. and Kuzyk, R.W., "Stormwater Management Demonstration Study in St. Thomas, Ontario," Proceedings Stormwater Management Model (SWMM) Users Group Meeting, May 4-5, 1978, EPA-600/9-78-019 (NTIS PB-285993/2BE), USEPA, Washington, DC, July 1978, 1-29.
KEY: St. Thomas, Ontario/SWMM/STORM/RUNOFF/EXTRAN/Quality/Controls/Case study/RECEIV
ABSTR: Application of SWMM and STORM for flooding and pollution control in Kettle Creek.

30. Clarke, W.G. and Kuzyk, R.W., "A Systems Demonstration in the City of St. Thomas," Proceedings of Conference on Modern Concepts in Urban Drainage, Toronto, Ontario, Canada-Ontario Agreement Conference Proceedings No. 5, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, March 1977, 249-260.
KEY: STORM/SWMM/RECEIV/St. Thomas, Ontario/EXTRAN/Receiving water/Quality
ABSTR: Use of STORM for runoff quantity and quality prediction and SWMM Receive Block for some receiving water prediction in Kettle Creek.
EXTRAN used only in planning stages.

31. Cole, G.D., Varner, L.W. and Shutt, J.W., "SWMM Usage in Facilities Planning," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, November 13-14, 1978, EPA-600/9-79-003 (NTIS PB-290742/6BE), USEPA, Washington, DC, November 1978, 190-217.
KEY: SWMM/Case studies/Lima, OH/Bucyrus, OH/Hicksville, OH/Marion, OH/Project Summaries
ABSTR: General descriptions of several original SWMM case studies.

32. Colston, N.V., "Characterization and Treatment of Urban Land Runoff," EPA-670/2-74-096, USEPA, Cincinnati, OH, December 1974.
KEY: Urban runoff data/SWMM/Durham, NC/RUNOFF/TRANSPORT/Quality
ABSTR: Calibration and verification of original SWMM model on Third Fork Creek basin in Durham.

33. Cullum, M., "Calibration of the Storm Water Management Model (SWMM) with Flow and Quality Data from a Single Family Residential Community in Boca Raton, Florida," Water Chemistry Division, Resource Planning Department, South Florida Water Management District, West Palm Beach, Florida, October 1984.
KEY: Calibration/South Florida/loadings/STORAGE-TREATMENT/Quality/RUNOFF/SWMM
ABSTR: RUNOFF and STORAGE-TREATMENT blocks are calibrated using five storms in Timbercreek watershed

34. Cunge, J.A. and Mazaoudou, B., "Mathematical Modelling of Complex Surge Systems: Difficulties in Computation and Simulation of Physical Situations," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 1, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 363-373.
KEY: Surcharging/CAREDA/SOGREAH/Theory/Hydraulics/Flow routing
ABSTR: Numerical problems in simulation of surcharging are described.

35. Dee, A., McConville, T. and Song, C.C.S., "An Integrated Modeling Approach for Evaluating CSO Treatment Alternatives," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton,

Ontario, L8S 4L7, September 1981, 399-426.

KEY: Ft. Wayne, IN/Combined sewer/RUNOFF/RECEIV/SWMM/Surcharging/Model comparison

ABSTR: Integration of combined sewer and river models is presented for CSO control.

36. Dever, R.J. and Roesner, L.A., "Development of an Urban Highway Storm Drainage Model Based on SWMM," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, June 19-20, 1980, EPA-600/9-80-064 (NTIS PB81-173858), USEPA, Athens, GA, December 1980, 121-132.
KEY: Theory/RUNOFF/SWMM/Highways/Design storm
ABSTR: Two significant modifications to SWMM are the inclusion of the simulation of inlet hydraulics and the addition of kinematic cascades for overland flow.
37. Dever, R.J. and Roesner, L.A., "Urban Highway Storm Drainage Model Vol. 5. Drainage Design Program, User's Manual and Documentation," FHWA/RD-83/045, Federal Highway Administration, McLean, VA, December 1983.
KEY: SWMM/Highways/Design/Hydraulics/RUNOFF/Flow routing/Documentation/Theory/User's manual
ABSTR: Modifications to SWMM RUNOFF block quantity and quality channel/pipe routing algorithms are described.
38. Dever, R.J., Roesner, L.A. and Aldrich, J.A., "Urban Highway Storm Drainage Model Vol. 4. Surface Runoff Program, User's Manual and Documentation," FHWA/RD-83/044, Federal Highway Administration, McLean, VA, December 1983.
KEY: SWMM/Highways/RUNOFF/Theory/Documentation/User's manual/Quality/Detention storage
ABSTR: Modifications to SWMM RUNOFF block quantity and quality algorithms for use in highway runoff are described.
39. Dever, R.J., Roesner, L.A. and Aldrich, J.A., "Urban Highway Storm Drainage Model Vol. 6. Analysis Module, User's Manual and Documentation," FHWA/RD-83/046, Federal Highway Administration, McLean, VA, December 1983.
KEY: SWMM/EXTRAN/Highways/Theory/Hydraulics/Flow routing/Documentation/User's manual/Surcharging
ABSTR: Adaptation of SWMM EXTRAN block for use in subsurface highway drainage.
40. Dever, R.J., Roesner, L.A. and Schmalz, R.A., "Urban Highway Storm Drainage Model Vol. 3. Inlet Design Program, User's Manual and Documentation," FHWA/RD-83/043, Federal Highway Administration, McLean, VA, December 1983.
KEY: SWMM/Highways/RUNOFF/Inlets/Documentation/Theory/User's manual
ABSTR: Many modifications to SWMM Runoff block are described for simulation of stormwater runoff into highway inlets.

41. Digiano, F.A., Adrian, D.D. and Mangarella, P.A., eds., "Short Course Proceedings -- Applications of Stormwater Management Models, 1976," EPA-600/2-77-065 (NTIS PB-265321), USEPA, Cincinnati, OH, March 1977.
KEY: SWMM/User's manual/Documentation/Case studies
ABSTR: Update of 1974 proceedings containing guidelines for use of all blocks of SWMM.

42. Digiano, F.A. and Mangarella, P.A., eds., "Short Course Proceedings: Applications of Stormwater Management Models. August 1974, University of Massachusetts," EPA-670/2-75-065 (NTIS PB-247163), USEPA, Cincinnati, OH, June 1975.
KEY: SWMM/Documentation/User's manual/Case studies
ABSTR: Documentation of 5-day short course on how to use original SWMM and on urban hydrology in general.

43. Diniz, E.V., "Modifications to the Storm Water Management Model and Application to Natural Drainage Systems," Urban Storm Drainage, Proceedings of the First International Conference, Southampton, P.R. Helliwell, ed., Pentech Press, London, April 1978, 256-274.
KEY: SWMM/Runoff/Porous pavement/Quality/Woodlands, TX/Houston, TX/Regression analysis
ABSTR: Modifications to SWMM for porous pavement, base flow, rating curves for quality parameters.

44. Diniz, E.V. and Espey, W.H., Jr., "Maximum Utilization of Water Resources in a Planned Community, Application of the Storm Water Management Model, Volume I," EPA-600/2-79-050c, USEPA, Cincinnati, OH, July 1979.
KEY: SWMM/Woodlands, TX/Houston, TX/Porous pavement/Urban runoff data/Quality
ABSTR: Application of SWMM to Houston-area catchments. Alterations for porous pavement, natural cross sections and rating curves.

45. Diniz, E.V., Holloway, D.E. and Characklis, W.G., "Modeling Urban Runoff from a Planned Community," Proceedings of EPA Conference on Environmental Modeling and Simulation, W.R. Ott, ed., EPA-600/9-76-016 (NTIS PB-257142), USEPA, Washington, DC, July 1976, 367-371.
KEY: SWMM/RUNOFF/Porous pavement/Infiltration/Houston, TX/Woodlands, TX/Urban runoff data/Quality
ABSTR: Modifications to original SWMM for application to natural areas near Houston.

46. Downs, W.C., "Design of Stormwater Management Systems in South Florida Using the USEPA Storm Water Management Model (SWMM)," Unpublished M.E. Project Report, Dept. of Environmental Engineering Sciences, University of Florida, Gainesville, July 1984.
KEY: SWMM/RUNOFF/TRANSPORT/EXTRAN/Storage-treatment/Detention storage/Urban drainage/Infiltration/Flood control/Sarasota County, FL
ABSTR: SWMM is used for drainage design for planned developments south of Tampa. Lakes in development are simulated using the storage units

in the Transport block.

47. Drehwing, F.J., Murphy, C.B., Jr., Carleo, D.J. and Jordan, T.A.,
"Combined Sewer Overflow Abatement Program, Rochester, N.Y., Volume I:
Abatement Analysis," EPA-600/2-79-031a, USEPA, Cincinnati, OH, July
1979.
KEY: SWMM/EXTRAN/Surcharging/Rochester, NY/Combined sewer/RUNOFF/Urban
runoff data/Regression analysis/Model comparison/Loadings
ABSTR: Comprehensive data collection and model application in
Rochester.
48. Dwornik, D.S., "A Stormwater Collection and Reuse System for the
Kennedy Space Center, Florida," ME Thesis, Dept. of Environmental
Engineering Sciences, University of Florida, Gainesville, 1984.
KEY: SWMM/STORAGE-TREATMENT/RUNOFF/Continuous
simulation/SYNOP/Melbourne, FL
ABSTR: Use of SWMM for a water supply study at the Kennedy Space
Center.
49. Eicher, C.W., "Application of SWMM-EXTRAN for the Analysis of Existing
Urban Drainage Systems," Proceedings Stormwater Management Model (SWMM)
Users Group Meeting, May 4-5, 1978, EPA-600/9-78-019 (NTIS PB-
285993/2BE), USEPA, Washington, DC, July 1978, 31-48.
KEY: Toronto, Ontario/SWMM/Surcharging/EXTRAN/RUNOFF/Case studies
ABSTR: General description of EXTRAN case studies.
50. El-Sharkawy, A. and Kummier, R.H., "Sensitivity Analysis of SWMM
Predictions on Water Quality in the Detroit River," Proceedings of
Stormwater and Water Quality Model Users Group Meeting, April 12-13,
1984, EPA-600/9-85-003, USEPA, Athens, GA, January 1985, 67-80.
KEY: SWMM/Detroit, MI/Detroit River/Combined sewer/Sensitivity
analysis/Quality/Receiving water
ABSTR: Use of the Fourier Amplitude Sensitivity Test (FAST) to analyze
sensitivity of Detroit River concentrations to individual CSO inputs.
51. Ellis, F.W. and Sutherland, R.C., "An Approach to Urban Pollutant
Washoff Modeling," Proceedings, International Symposium on Urban Storm
Runoff, University of Kentucky, Lexington, July 1979, 325-340.
KEY: SWMM/STORM/Quality/Buildup/Washoff/Sediment/Street
sweeping/Data/Sensitivity analysis
ABSTR: Analysis of original SWMM/STORM buildup-washoff relationships
and modifications implemented in a new model. Sensitivity analysis on
parameters.
52. Ellis, J.H., McBean, E.A. and Mulamoottil, G., "Design of Dual Drainage
Systems Using SWMM," Journal of the Hydraulics Division, ASCE, Vol.
108, No. HY10, October 1982, 1222-1227.
KEY: Urban drainage/Storm water/SWMM/Ontario/RUNOFF/Quality/Calibration/
Flood control
ABSTR: Problems with using the original SWMM model for design of dual

(major/minor) drainage systems are described, and a suitable calibration procedure is presented.

53. Field, R., "The USEPA Office of Research and Development's View of Combined Sewer Overflow Control," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 4, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 1333-1356.
KEY: Combined sewer/Model comparison/SWMM/Controls/Case studies
ABSTR: Overview of CSO technology.
54. Field, R. and Struzeski, E.J., Jr., "Management and Control of Combined Sewer Overflows," Journal Water Pollution Control Federation, Vol. 44, No. 7, July 1972, 1393-1415.
KEY: Combined sewer/Dry-weather flow/Storm sewers/Controls/SWMM/Case studies
ABSTR: Overall survey of technology as of 1972, including development of SWMM and combined sewer control case studies.
55. Fok, A.T.K. and Tan, S.H., "Detention Lake Application in Master Drainage Planning," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, June 19-20, 1980, EPA-600/9-80-064 (NTIS PB81-173858), USEPA, Athens, GA, December 1980, 178-199.
KEY: Edmonton, Alberta/SWMM/RUNOFF/STORM/HYMO/EXTRAN/Detention storage/Design storm/Urban drainage
ABSTR: Application of several models to drainage design. EXTRAN used for detailed hydraulics.
56. Gancarz, D.H. and Huber, W.C., "The SWMM Storage/Treatment Block for the IBM-PC," Proceedings of Conference on Stormwater and Water Quality Management Modeling, Burlington, Ontario, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario L8S 4L7, September 1984, 53-58.
KEY: SWMM/STORAGE-TREATMENT/Microcomputers/IBM-PC
ABSTR: Installation of SWMM S/T on IBM-PC and workalikes.
57. Geiger, W.F., "Goodness and Limits in Urban Runoff Modelling," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 2, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 635-644.
KEY: SWMM/STORM/Model comparison/ILLUDAS/Munich, Germany/Combined sewer/Design storm/Urban runoff data
ABSTR: Comparison of models using Munich data
58. Geiger, W.F., "Characteristics of Combined Sewer Runoff," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 3, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 851-860.
KEY: Combined sewer/Quality/Urban runoff data/Munich, Germany
ABSTR: Excellent CSO data

59. Giguere, P.R. and Riek, G.C., "Infiltration/Inflow Modelling for the East Bay (Oakland- Berkeley Area) I/I Study," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 51-76.
KEY: Oakland, CA/Infiltration/RUNOFF/TRANSPORT/SWMM
ABSTR: Use of SWMM to simulate dry-weather flow.
60. Goforth, G.F.E., "Long-term Performance of Stormwater Detention Facilities: A Comparison of Design Methodologies," Publication No. 58, Florida Water Resources Research Center, University of Florida, Gainesville, June 1981.
KEY: SWMM/STORAGE-TREATMENT/Statistical method/Detention storage/SYNOP
ABSTR: Comparison of SWMM S/T block with the Hydrosience statistical method.
61. Goforth, G.F.E., Heaney, J.P. and Huber, W.C., "Comparison of Basin Performance Modeling Techniques," Journal of Environmental Engineering Division, ASCE, Vol. 109, No. 5, October 1983, 1082-1098.
KEY: SWMM/Statistical method/STORAGE-TREATMENT/Optimization/Costs/Detention storage/SYNOP
ABSTR: A study comparing two methods available to estimate the long-term pollutant removal efficiency of stormwater detention basins was discussed. The two methods include SWMM version III and the Hydrosience statistical procedure (involving SYNOP). Cost estimates using the statistical method were higher than with SWMM, though of the same order of magnitude.
62. Gore and Storrie Ltd., "Storm Water Management Model Verification — Hamilton Test Catchment," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 99, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1980.
KEY: SWMM/RUNOFF/TRANSPORT/Quality/Hamilton, Ontario/Urban runoff data/Combined sewer
ABSTR: Test of SWMM using combined sewer data. Good quantity agreement. Poor quality agreement for some parameters.
63. Gore and Storrie Ltd., "Storm Water Management for Nepean, Merivale Area," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 89, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1979.
KEY: SWMM/STORM/RUNOFF/Continuous simulation/Design storm/Storage-treatment/Nepean, Ontario/Rideau River/Control costs
ABSTR: STORM (for continuous simulation) and SWMM (for event simulation) were used to study effect of controls on pollution of Rideau River. The catchment was 1300 acres of mixed land use.

64. Hagerman, J.A. and Dressler, F.R.S., "Storm Water Management Model: Dissemination and User Assistance," EPA-670/2-75-041 (NTIS PB-242544), USEPA, Cincinnati, OH, May 1975.
KEY: SWMM/Documentation/Case studies/Binghamton, NY/Princeton, NJ/Philadelphia, PA/RUNOFF/TRANSPORT/Dissemination
ABSTR: Presentation of needs of users of original SWMM model, with applications in three cities.
65. Harley, B.M., "Application of the STORM Model to Design Problems in Singapore and Kaohsiung, Republic of China," Proceedings of Stormwater and Water Quality Model Users Group Meeting, January 27-28, 1983, EPA-600/9-83-015, USEPA, Athens, GA, September 1983, 22-42.
KEY: Kaohsiung, China/Water supply/STORM/Singapore/Continuous simulation/Quality/Controls/MITCAT
ABSTR: Use of STORM for water supply and CSO problems.
66. Harlow, C.D., Jamshidi, E., Kummier, R.H., Frith, J.G. and Anderson, J.A., "One Dimensional Water Quality Models for Dynamic, Small Rivers: The Rouge River," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, January 19-20, 1981, Austin, TX, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, January 1981, 56-83.
KEY: Detroit, MI/RECEIV/Combined sewer/QUAL II/Quality/Theory/Receiving water
ABSTR: Receiving water models for small streams used in the Detroit 201 study are described.
67. Heaney, J.P. and Hasan, S.M., "Methodology for Evaluating the Cost of Urban Stormwater Quality Management," Proceedings, Applications of Storm Water Management Models- 1976, EPA-600/2-77-065, USEPA, Cincinnati, OH, March 1977, 15-33.
KEY: Costs/Storm water/Combined sewer/STORM/Level I/SWMM/Optimization/Theory
ABSTR: SWMM was used only to simulate a single storm event for a single catchment area for each of five cities in the U.S. A procedure for minimizing control costs is explained.
68. Heaney, J.P., Huber, W.C. and Nix, S.J., "Storm Water Management Model: Level I: Preliminary Screening Procedures," EPA-600/2-76-275 (NTIS PB-259916), USEPA, Cincinnati, OH, October 1976.
KEY: Costs/Optimization/STORM/Continuous simulation/Level I/Quality/Regression analysis/Atlanta, GA/Denver, CO/Minneapolis, MN/San Francisco, CA/Washington, DC/Storage-treatment
ABSTR: Quantity and quality regression relationships for runoff and pollutant loads are given. Optimal mixes of storage and treatment are shown based on STORM simulations in 5 cities.
69. Heaney, J.P., Huber, W.C., Sheikh, H.M., Medina, M.A., Doyle, J.R., Peltz, W.A. and Darling, J.E., "Urban Storm Water Management Modeling and Decision-Making," EPA-670/2-75-022 (NTIS PB-242290), USEPA, Cincinnati, OH, May 1975.
KEY: Combined sewer/Quality/Storm water/Cost sharing/SWMM/Storage-

treatment/Lancaster, PA/Costs/Documentation/Theory/Swirl
concentrator/Erosion/Design

ABSTR: Documentation of new procedures used in SWMM version II,
especially for storage-treatment, erosion, leaf litter, hydraulic
design. Game theory is applied to cost sharing.

70. Heeps, D.P. and Mein, R.G., "Independent Comparison of Three Urban
Runoff Models," Journal of the Hydraulics Div., ASCE, Vol. 100, No.
HY7, July 1974, 995-1009.
KEY: SWMM/RRL/UCURM/Model comparison/Canberra, Australia/Melbourne,
Australia
ABSTR: Comparison of original SWMM model using Australian data.
71. Henry, D. and James, W., "Investigation of Management Alternatives for
Relieving CSO's for the City of Hamilton," Proceedings, Stormwater and
Water Quality Management Modeling and SWMM Users Group Meeting,
September 28-29, 1981, USEPA and Ontario Ministry of the Environment,
Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, L8S
4L7, September 1981, 493-512.
KEY: Hamilton, Ontario/Combined
sewer/RUNOFF/EXTRAN/SWMM/Quality/Detention storage
ABSTR: SWMM application.
72. Henry, J.G. and Ahern, P.A., "The Effect of Storage on Storm and
Combined Sewers," Canada-Ontario Agreement on Great Lakes Water
Quality, Research Report No. 34, Training and Technology Transfer
Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, February
1976.
KEY: Storage-treatment/Detention storage/Design storm/Costs/Combined
sewer
ABSTR: Use of model based on SWMM RUNOFF and S/T blocks for simulation
of effect of storage.
73. Hoang, D., "Dynamic Model Adjustment," Proceedings of Stormwater and
Water Quality Management Modeling Users Group Meeting, March 25-26,
1982, EPA-600/9-82-015 (NTIS PB83-145540), USEPA, Athens, GA., August
1982, 162-178.
KEY: Calibration/EXTRAN/SWMM/Theory/Flow routing/Hydraulics/Sensitivity
analysis
ABSTR: Paper presents calibration and sensitivity analysis of a flow
routing model using differential errors derived Analytically from flow
equations.
74. Hogland, W., Berndtsson, R. and Larson, M., "Estimation of Quality and
Pollution Load of Combined Sewer Overflow Discharge," Proceedings,
Third International Conference on Urban Storm Drainage, Goteborg,
Sweden, Vol. 3, Dept. Sanitary Engineering, Chalmers University of
Technology, S-41296 Goteborg, Sweden, June 1984, 841-850.
KEY: Combined sewer/Quality/Data/Washoff/Malmo, Sweden/SWMM/Loadings
ABSTR: CSO study in Malmo.

75. Hopkinson, C.S., Jr. and Day, J.W., Jr., "Modeling the Relationship Between Development and Storm Water and Nutrient Runoff," Environmental Management, Vol. 4, No. 4, 1980, 315-324.
KEY: Urban drainage/SWMM/RUNOFF/RECEIV/loadings/Quality
ABSTR: SWMM is used to model the effects of urban and agricultural development on a downstream Louisiana swamp forest

76. Huber, W.C., "Discussion of Special Model Studies," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 4, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 1564-1582.
KEY: Model comparison/SWMM/Case studies/Continuous simulation
ABSTR: Discussion of several modeling papers.

77. Huber, W.C., "Use of the EPA SWMM for Continuous Simulation," Rice University Studies, Vol. 65, No. 1, Houston, TX, 1979, 43-51.
KEY: SWMM/Continuous simulation/Frequency analysis/STORM/Minneapolis, MN
ABSTR: Description of alterations to SWMM to implement continuous simulation. Example of comparison of highest hourly rainfall, runoff and pollutant load values.

78. Huber, W.C., "The EPA Storm Water Management Model: Documentation and Maintenance," Proceedings of the Conference on Frontiers in Hydraulic Engineering, Cambridge, MA, ASCE, New York, August 1983, 312-317.
KEY: SWMM/Model maintenance/Dissemination
ABSTR: Discussion of SWMM maintenance, dissemination, documentation, user support, etc.

79. Huber, W.C., Gancarz, D.H. and Dickinson, R.E., "APPLE SWMM — A Possibility?," Proceedings of ASCE Engineering Foundation Conference on Emerging Computer Techniques in Stormwater and Flood Management, Niagara-on-the-Lake, Ontario, ASCE, New York, November 1983, 366-372.
KEY: SWMM/Microcomputers/RUNOFF/STORAGE-TREATMENT/Apple
ABSTR: Attempt at putting SWMM on Apple microcomputer.

80. Huber, W.C. and Heaney, J.P., "Operational Models for Stormwater Quality Management," in Environmental Impact of Nonpoint Source Pollution, M.R. Overcash and J.M. Davidson, eds., Ann Arbor Science, Ann Arbor, MI, 1980, 397-444.
KEY: Model comparison/SWMM/Quality/Documentation
ABSTR: Comparison of SWMM and 13 other operational surface water quality models.

81. Huber, W.C., Heaney, J.P., Aggidis, D.A., Dickinson, R.E. and Wallace, R.W., "Urban Rainfall-Runoff-Quality Data Base," EPA-600/2-81-238 (NTIS PB82-221094), USEPA, Cincinnati, OH, October 1981.
KEY: Urban runoff data/Data base/Quality
ABSTR: A collection of catchments suitable for model applications.

Site descriptions include references to model applications that have been performed, including several SWMM applications.

82. Huber, W.C., Heaney, J.P., Medina, M.A., Peltz, W.A., Sheikh, H.M. and Smith, G.F., "Storm Water Management Model: User's Manual, Version II," EPA-670/2-75-017 (NTIS PB-257809), USEPA, Cincinnati, OH, March 1975.
KEY: SWMM/Combined sewer/User's manual/Documentation/Lancaster, PA/St. Johns River, FL/Theory
ABSTR: User's manual for SWMM version II. Applications in Lancaster and St. Johns River (for RECEIV).
83. Huber, W.C., Heaney, J.P., Nix, S.J., Dickinson, R.E. and Polmann, D.J., "Storm Water Management Model User's Manual Version III," EPA-600/2-84-109a (NTIS PB84-198423), USEPA, Cincinnati, OH (also available from Dept. of Environmental Engineering Sciences, University of Florida, Gainesville), November 1981.
KEY: SWMM/User's Manual/Documentation
ABSTR: User's manual for SWMM, except for EXTRAN.
84. Huber, W.C., Heaney, J.P. and Sheikh, H.M., "The EPA Storm Water Management Model: A Current Overview," Proceedings, Combined Sewer Overflow Seminar Papers, EPA-670/2-73-077, USEPA, Cincinnati, OH, November 1973, 181-216.
KEY: Combined sewer/Storm water/SWMM/Lancaster, PA/Documentation
ABSTR: Overview of SWMM as of 1973, including application in Lancaster, PA.
85. Huber, W.C., Heaney, J.P. and Torno, H.C., "Computer Impact on Environmental Runoff and Wastewater Studies," Preprint 3106, ASCE Fall Convention and Exhibit, San Francisco, ASCE, New York, NY, October 1977.
KEY: Model comparison/SWMM/STORM/San Francisco, CA
ABSTR: Brief descriptions of applications of urban runoff models in urban areas.
86. Huber, W.C. and MacIntyre, D.F., "Receiving Water Quality Data Base for Model Testing," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 203-211.
KEY: Data Base/Receiving water/Quality
ABSTR: Data from 4 rivers, 2 lakes and one estuary are described for use in testing receiving water quality models.
87. Huber, W.C., Russell, L.W. and Pyatt, E.E., "Routing Model for Combined Sewage," Preprint 1108, ASCE National Water Resources Engineering Meeting, Memphis, TN, ASCE, New York, NY, January 1970.
KEY: SWMM/TRANSPORT/Theory/Documentation/San Francisco, CA
ABSTR: Presentation of theory of SWMM Transport block, with application

to Selby Street catchment in San Francisco. Transport kinematic wave results are also compared to method of characteristics results.

88. Jacobsen, P., "Surcharged Sewer Simulation," Report from Technical University of Denmark to the Danish Engineering Society Sewage Committee, Copenhagen, April 1983.
KEY: SWMM/EXTRAN/S11S/Model comparison/Surcharging/Copenhagen, Denmark/Data/FLOW ROUTING/HYDRAULICS
ABSTR: Comparison of SWMM and S11S surcharge routines with measured data.
89. Jacobsen, P. and Harremoes, P., "The Significance of Head Loss Parameters in Surcharged Sewer Simulations," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 1, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 167-176.
KEY: EXTRAN/S11S/ILLUDAS/Surcharging/Data/Denmark
ABSTR: Comparison of model with field measurements of surcharging.
90. James, W., "A Pre-and Post-Processing Program Package for the Stormwater Management Model," Storm Water Management Model User's Group Meeting, Annapolis, MD, EPA-600/9-79-003 (NTIS PB-290742/6BE), USEPA, Washington, DC, November 1978, 218-233.
KEY: SWMM/FASTSWMM/Fortran
ABSTR: Introduction to FASTSWMM programs for interactive input- output to SWMM.
91. James, W. and Drake, J.J., "Kinematic Design Storms Incorporating Spatial and Time Averaging," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, June 19-20, 1980, EPA-600/9-80-064 (NTIS PB81-173858), USEPA, Athens, GA, December 1980, 133-149.
KEY: Theory/RUNOFF/SWMM/Kinematic storms/Rainfall
ABSTR: Methods for generating input hyetographs to SWMM for moving storms are described.
92. James, W., Haro, H., Robinson, M.A., Henry, D. and Kitai, R., "Hydrometeorological Data Acquisition: Innovative, High-Resolution Programmable Instrumentation for Stormwater Management," Proceedings of Stormwater and Water Quality Management Modeling Users Group Meeting, March 25-26, 1982, EPA-600/9-82-015 (NTIS PB83-145540), USEPA, Athens, GA., August 1982, 128-151.
KEY: Instrumentation/Urban runoff data/Rainfall
ABSTR: Rainfall, sewer levels and data recording and transmittal instrumentation is described. The instruments are usually microprocessor controlled.
93. James, W., Henry, D. and Haro, H., "Integrity of Rainfall Time Series for Models of Existing Combined Sewer Systems," Proceedings of the Conference on Stormwater and Water Quality Management Modeling, USEPA, and Ontario Ministry of Environment, University of Ottawa, Civil

Engineering Dept., Ottawa, Ontario, October 1982, 146-159.

KEY: SWMM/Rainfall/RUNOFF/Kinematic storms

ABSTR: Argues for use of moving storms derived from multiple raingage data.

94. James, W. and Mitri, H., "SWMM Compatible Algorithm for Side-Weir Structures," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, January 19-20, 1981, Austin, TX, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, January 1981, 141-157.
KEY: Theory/EXTRAN/SWMM/Combined sewer/Hydraulics
ABSTR: Routines for simulating complex hydraulics of diversion structures are described.
95. James, W. and Mitri, H., "Modelling Side-Weir Diversion Structures for Storm Water Management," Canadian Journal of Civil Engineering, Vol.9, No. 2, June 1982, 197-205.
KEY: SWMM/EXTRAN/Theory/Hamilton, Ontario/Combined sewer/Hydraulics
ABSTR: Described is a model formulated for the Hamilton, Ontario, urban drainage system. A new program called OVERFLOW 3 was developed which has improved the simulation of side-weir diversion flows presently included in the SWMM-EXTRAN program.
96. James, W. and Robinson, M.A., "Interactive Processors for Design Use of Large Program Packages," Canadian Journal of Civil Engineering, Vol. 9 No. 3, September 1982, 449-457.
KEY: FASTSWMM/SWMM/Fortran
ABSTR: Describes FASTSWMM program for interactive input of data to SWMM.
97. James, W. and Robinson, M.A., "PCSWMM3 -- Version 3 of the Executive, Runoff and Extended Transport Blocks, Adapted for the IBM-PC," Proceedings of the Stormwater and Water Quality Modelling Conference, Burlington, Ontario, USEPA, and Ontario Ministry of Environment, Dept. of Civil Engineers, McMaster University, Hamilton, Ontario L8S 4L7, September 1984, 39-52.
KEY: SWMM/Microcomputers/RUNOFF/EXTRAN/IBM- PC/Fortran/Documentation
ABSTR: Documentation of PCSWMM3 for use on IBM-PCs and work-alikes (any MS-DOS system).
98. James, W. and Robinson, M.A., "Continuous Models Essential for Detention Design," Engineering Foundation Conference on Stormwater Detention Facilities Planning Design Operation and Maintenance, Henniker, NH, American Society of Civil Engineers, Henniker, NH, ASCE, New York, NY, August 1982, 163-175.
KEY: SWMM/Continuous simulation/Detention storage/Design storm
ABSTR: Shows inadequacy of design storms for detention basin design and advocates use of continuous simulation.

99. James, W. and Robinson, M.A., "Standard Terms of Reference to Ensure Satisfactory Computer-Based Urban Drainage Design Studies," Canadian Journal of Civil Engineering, Vol. 8, No. 3, 1981, 294-303.
KEY: SWMM/RUNOFF/Sensitivity analysis/Buildup/Washoff/Quality
ABSTR: Presents standards for calibration, verification and sensitivity analyses of stormwater models. SWMM is used as an example, and sensitivity to various Runoff block parameters is shown.
100. James, W. and Scheckenberger, R., "RAINPAC - A Program Package for Analysis of Rainfall Inputs in Computing Storm Dynamics," Proceedings of the Stormwater and Water Quality Modelling Meeting, April 12-13, 1984, Detroit, MI, USEPA, Athens, GA, April 1984,
KEY: Rainfall/Kinematic storms
ABSTR: Describes programs for analyzing point rainfall data to construct multiple hyetographs for input to models to simulate moving storms.
101. James, W. and Scheckenberger, R., "Storm Dynamics Model for Urban Runoff," Proceedings, International Symposium on Urban Hydrology, Hydraulics and Sediment Control, Report UKY BU131, University of Kentucky, Lexington, July 1983, 11-18.
KEY: SWMM/Kinematic storms/Hamilton, Ontario
ABSTR: Description of programs to develop input rainfall data to SWMM for moving storms from stationary raingages and other meteorological information. Application to Chedoke Creek watershed in Hamilton.
102. James, W. and Scheckenberger, R., "RAINPAK -- A Program Package for Analysis of Storm Dynamics in Computing Rainfall Dynamics," Proceedings of Stormwater and Water Quality Model Users Group Meeting, April 12-13, 1984, EPA-600/9-85-003, USEPA, Athens, GA, January 1985, 81-100.
KEY: Rainfall/Kinematic storms/Instrumentation
ABSTR: RAINPAK is a collection of programs to calculate hyetographs at different basin locations incorporating moving storm dynamics and spatial variation of the rain based on point rainfall measurements.
103. James, W. and Shtifter, Z., "Implications of Storm Dynamics on Design Storm Inputs," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, L8S 4L7, September 1981, 55-78.
KEY: Theory/SWMM/Design storm/Kinematic storms/Hamilton, Ontario/Rainfall
ABSTR: Inadequacy of design storms is documented using real, moving storms. Impact on BOD is shown.
104. James, W. and Unal, A., "Data Base Management System for Urban Stormwater Modelling," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 4, Dept. Sanitary

Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 1377-1386.

KEY: SWMM/Time series/Microcomputers/Data base management/HSPF

ABSTR: Describes improvements to HSPF Time Series Store (TSS) program for management of hydrologic time series for model input and output.

105. James, W. and Unal, A., "CHGTSM — A Combined Hydrologic Time Series and Topographic Data Base Manager," Proceedings of Stormwater and Water Quality Model Users Group Meeting, April 12-13, 1984, EPA-600/9-85-003, USEPA, Athens, GA, January 1985, 217-232.

KEY: SWMM/HSPF/Time series/Data base/Local area network/Topographic data/Data base management/Microcomputers

ABSTR: Management of time series and geographic data using mini and microcomputers.

106. James F. MacLaren Ltd., "Brucewood Urban Test Catchment," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 100, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1980.

KEY: Urban runoff data/SWMM/Snowmelt/North York, Ontario/Toronto, Ontario/Case study

ABSTR: Data collection on 48-acre single-family residential area during 1974-75. Snowmelt events were also monitored. Five events were simulated with SWMM.

107. James F. MacLaren Ltd., "Review of Canadian Design Practice and Comparison of Urban Hydrologic Models," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 26, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, October 1975.

KEY: SWMM/UCUR/RRL/QUORM/Dorsch HVM/Model comparison/Baltimore, MD/Kingston, Ontario/MITCAT

ABSTR: Comparison of models for use in Canada on Northwood, Gray Haven and Calvin Park catchments.

108. Jensen, M., "Runoff Pattern and Peak Flows from Moving Block Rains Based on a Linear Time-Area Curve," Nordic Hydrology, Vol. 15, 1984, 155-168.

KEY: Statistical Method/SWMM/Design storm/Model comparison

ABSTR: Dimensionless peak flows are found by applying the time area model (TAM) to a linear time-area curve. Results are compared with SWMM results

109. Jewell, T.K., "Application and Testing of the U.S. Environmental Protection Agency Storm Water Management Model to Greenfield, Massachusetts," Unpublished masters project report, Dept. of Civil Engineering, University of Massachusetts, Amherst, November 1974.

KEY: SWMM/RUNOFF/TRANSPORT/Greenfield, MA/Urban runoff data/Sensitivity analysis/Case study

ABSTR: Application of original SWMM to Maple Brook catchment in

Greenfield.

110. Jewell, T.K. and Adrian, D.D., "SWMM Storm Water Pollutant Washoff Functions," Journal Environmental Engineering Div., ASCE, Vol. 104, No. EE5, October 1978, 1036-1040.
KEY: SWMM/Quality/STORM/Buildup/Washoff/RUNOFF/Theory
ABSTR: Paper considers the logic used to develop pollutant washoff functions in SWMM and STORM. Outlines improvements.
111. Jewell, T.K., Adrian, D.D. and DiGiano, F.A., "Urban Stormwater Pollutant Loadings," Publication No. 113, Water Resources Research Center, University of Massachusetts, Amherst, May 1980.
KEY: SWMM/Quality/Buildup/Washoff/Regression analysis
ABSTR: Analysis of quality generation and development of regression relations.
112. Jewell, T.K., Adrian, D.D. and Hosmer, D.W., "Analysis of Stormwater Pollutant Washoff Estimation Techniques," Proceedings, International Symposium on Urban Storm Runoff, University of Kentucky, Lexington, July 1980, 135-141.
KEY: SWMM/Quality/Buildup/Washoff/Regression analysis
ABSTR: Analysis of original SWMM (and related models) buildup and washoff parameters. Use of regression relationships to improve estimates.
113. Jewell, T.K., Mangarella, P.A. and DiGiano, F.A., "Application and Testing of the EPA Storm Water Management Model to Greenfield, Mass.," Proceedings, National Symposium on Urban Rainfall, Runoff and Sediment Control, University of Kentucky, Lexington, July 1974, 61-71.
KEY: SWMM/Quality/Urban runoff data/Case study/RUNOFF/TRANSPORT/Greenfield, MA/Calibration/Sensitivity analysis
ABSTR: A sensitivity analysis of the input parameters for the RUNOFF portion of the simulation program has been made.
114. Jewell, T.K., Nunno, T.J. and Adrian, D.D., "Methodology for Calibrating Stormwater Models," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, May 4-5, 1978, EPA-600/9-78-019 (NTIS PB285993/2BE), USEPA, Washington, DC, July 1978, 125-169.
KEY: Greenfield, MA/Calibration/RUNOFF/Quality/SWMM/Theory/Regression analysis
ABSTR: Quality calibration difficulties with original SWMM are described along with regression-type results as alternatives.
115. Jewell, T.K., Nunno, T.J. and Adrian, D.D., "Methodology for Calibrating Stormwater Models," Journal Environmental Engineering Div., ASCE, Vol. 104, No. EE3, June 1978, 485-501.
KEY: Quality/Storm water/SWMM/RUNOFF/Calibration/Buildup/Washoff/Regression analysis
ABSTR: A method is presented for calibrating coupled quantity-quality stormwater management models; SWMM is used as an example.

116. Johnson, R.L., Usinowicz, P.J. and Reardon, R.D., "Storm Water Management for Little Lehigh and Cedar Creek Drainage Basins," NTIS PB-272598, Prepared for US Dept. of Housing & Urban Development, Wash. DC, Lehigh University, Bethlehem, PA, December 1976.
KEY: Quality/Controls/Storm water/Allentown, PA/Cedar Creek, PA/Little Lehigh Creek, PA/SWMM/Calibration/Urban runoff data/Case study
ABSTR: This report addresses the environmental problems of urban stormwater runoff in the Allentown, PA area. The study utilized extensive field surveys and water quality data to develop a first level calibration of SWMM for the Little Lehigh and Cedar Creek drainage basins, using the College Heights Boulevard Drainage System. The report discusses measurement techniques of water quality, rainfall, runoff, and storm flow.
117. Kassem, A.M. and Wisner, P.E., "Validity of the WRE-Transport Model," IMPSWM Progress Report No. 12, Dept. of Civil Engineering, University of Ottawa, Ontario, August 1980.
KEY: SWMM/EXTRAN/Theory/Model comparison/Dorsch HVM
ABSTR: Comparison of EXTRAN vs. HVM.
118. Kaufman, H.L. and Lai, F.-H., "Joint Use of SWMM and STORM Models for Planning Urban Sewer Systems," Proceedings of EPA Conference on Environmental Modeling and Simulation, W.R. Ott, ed., EPA-600/9-76-016 (NTIS PB-257142), USEPA, Washington, DC, July 1976, 144-150.
KEY: STORM/SWMM/Combined sewer/Elizabeth, NJ/Quality/Design storm
ABSTR: Application of STORM and SWMM to combined sewer problems in Elizabeth.
119. Kaufman, H.L. and Lai, F.-H., "Conventional and Advanced Sewer Design Concepts for Dual Purpose Flood and Pollution Control, A Preliminary Case Study, Elizabeth, New Jersey," EPA-600/2-78-090 (NTIS PB-285663), USEPA, Cincinnati, OH, May 1978.
KEY: SWMM/RUNOFF/TRANSPORT/Elizabeth, NJ/Combined sewer/Urban runoff data
ABSTR: Application of SWMM version II to CSO problems in Elizabeth.
120. Kennedy, J.M. and Sharon, J.D., "REGQUAL: A Useful Tool for Analysis of Combined Sewer Overflows," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 89-103.
KEY: Cincinnati, OH/SWMM/Combined sewer/Controls/Hydraulics
ABSTR: REGQUAL is an ancillary program to SWMM to supply rating curves for hydraulic structures and to simulate overflows.
121. Kibler, D.F., ed., Urban Stormwater Hydrology, Water Resources Monograph 7, American Geophysical Union, Washington, DC, 1982.
KEY: Model comparison/SWMM/Theory/Quality/Documentation

ABSTR: A book dealing with all components of urban hydrology.

122. Kimzey, J.R., Burns, R.A. and Liang, W.S., "Master Drainageway Planning Study, Boxelder Creek, Colorado," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, L8S 4L7, September 1981, 257-269.
KEY: Ft. Collins, CO/Drainage/RUNOFF/SWMM/Infiltration/Sensitivity analysis
ABSTR: SWMM is used in drainage design.
123. Kirshen, P.H. and Marks, D.H., "Screening Model for Storm Water Control," Journal Environmental Engineering Div., ASCE, Vol. 100, No. EE4, August 1974, 807-820.
KEY: Combined sewer/Screening/Storm water/SWMM/Cincinnati, OH/Optimization/Costs
ABSTR: The paper shows how SWMM can be used interactively with the screening model to plan for the control of combined sewer overflow and local flooding. Case study is made on Bloody Run Drainage Basin, Cincinnati.
124. Kirshen, P.H., Marks, D.H. and Schaake, J.C., Jr., "Mathematical Model for Screening Storm Water Control Alternatives," Parsons Laboratory Report No. 157, Dept. of Civil Engineering, MIT, Cambridge, MA, October 1972.
KEY: Screening/Optimization/Costs/SWMM/Cincinnati, OH
ABSTR: A linear programming model is coupled to SWMM for screening for minimum costs for piping, storage and treatment. Application is for the Bloody Run catchment in Cincinnati.
125. Kummier, R.H., "SWMM Modelling for the Detroit 201 Final Facilities Plan," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 1-35.
KEY: Detroit, MI/RUNOFF/TRANSPORT/STORAGE-TREATMENT/SWMM/Case study/Quality/Combined sewer/Waste load allocation
ABSTR: Major application of SWMM for a 201 plan covering most of central Detroit.
126. Kummier, R.H., Frith, J.G., Liang, C.-S., Wilson, R.L. and Williams, S.E., "SWMM Modeling of CSO Control Alternatives for Ecorse Creek," Proceedings, Stormwater and Water Quality Models Users Group Meeting, Montreal, Quebec, Report GREMU-83/03, Dept. de Genie Civil, Ecole Polytechnique, Montreal, Quebec H3C 3A7, September 1983, 159-175.
KEY: SWMM/RUNOFF/TRANSPORT/Detroit, MI/Case study/Combined sewer/Quality/Data/Controls/Costs/Detention storage
ABSTR: SWMM application for quality control in combined sewer system in Detroit. Control options are simulated and compared and costs

given.

127. Kummeler, R.H., Frith, J.G., Liang, C.S. and Anderson, J.A., "Uncertainty Analysis in Stormwater and Water Quality Modeling," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering and Eng. Mechanics, McMaster University, Hamilton Ontario L8S 4L7, September 1981, 1-54.
KEY: Detroit, MI/Combined sewer/RUNOFF/TRANSPORT/RECEIV/STORM/Sensitivity analysis/Quality/Frequency analysis
ABSTR: Control options are compared on the basis of the concentration-frequency curves resulting in the Detroit and Rouge Rivers.
128. Lager, J.A., Shubinski, R.P. and Russell, L.W., "Development of a Simulation Model for Storm Water Management," Journal Water Pollution Control Federation, Vol. 43, No. 12, December 1971, 2424-2435.
KEY: SWMM/Theory/Documentation/Combined sewer
ABSTR: Basic description of original SWMM.
129. Lager, J.A., Smith, W.G., Lynard, W.G., Finn, R.M. and Finnemore, E.J., "Urban Stormwater Management and Technology: Update and User's Guide," EPA-600/8-77-014, USEPA, Cincinnati, OH, September 1977.
KEY: Model comparison/Combined sewer/Quality/SWMM/Controls/Case studies
ABSTR: General guide to stormwater and combined sewer control and management. Modeling options are discussed. Several case studies for control are given.
130. Lai, F.-H., Kaufman, H.L. and Milletari, U.A., "Dual Purpose Detention Tank for Pollution Control and Flood Relief," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 132-145.
KEY: Elizabeth, NJ/Combined sewer/Detention storage/STORM/Sediment/SWMM
ABSTR: STORM and SWMM are used for screening and detailed simulation, respectively to study control options in Elizabeth, with emphasis on in-line tanks.
131. Larocque, M., "Utilisation de SWMM pour la Ville de Saint-Laurent (Utilization of SWMM for the City of Saint-Laurent)," Proceedings, Stormwater and Water Quality Models Users Group Meeting, Montreal, Quebec, Report GREMU-83/03, Dept. de Genie Civil, Ecole Polytechnique, Montreal, Quebec H3C 3A7, September 1983, 143-158.
KEY: SWMM/EXTRAN/Flood control/Saint-Laurent, Quebec
ABSTR: SWMM application to alleviate flooding in Saint-Laurent. Text in French.

132. Lessard, P. and Lavallee, P., "Combined Sewer Overflows: The Quebec City Experience," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 3, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 831-840.
KEY: SWMM/Combined sewer/Quebec City, Quebec/Quality/Data
ABSTR: Application to Quebec City.
133. Lombardo, P.S., "Critical Review of Currently Available Water Quality Models," Report to Office of Water Resources Technology, Hydrocomp, Inc., Palo Alto, CA, July 1973.
KEY: Model comparison/SWMM/HSP
ABSTR: Comparison of models as of 1973, including original SWMM.
134. M.M. Dillon Ltd., "Storm Water Management Model Verification Study," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 97, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1979.
KEY: Combined sewer/Storm water/SWMM/Toronto, Ontario/Urban runoff data/Calibration/Case study/RUNOFF/TRANSPORT/Quality

ABSTR: Data from 20 well-defined storm event were used to calibrate and verify SWMM for both quantity and quality. Quality verification results were reasonable and could probably be improved through intensive recalibration. Quantity verification results were good, with simulated flow volumes underestimated by about 3%.
135. Maalel, K., "Reliability Analysis Applied to Modeling of Hydrologic Processes," Publication No. 75, Florida Water Resources Research Center, University of Florida, Gainesville, 1983.
KEY: SWMM/RUNOFF/Continuous simulation/Broward County, FL/Data/Multiple event simulation/Calibration/Frequency analysis
ABSTR: Frequency analysis performed on SWMM output. Calibration using multiple event simulation.
136. Maalel, K. and Huber, W.C., "SWMM Calibration Using Continuous and Multiple Event Simulation," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 2, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 595-604.
KEY: SWMM/RUNOFF/Continuous simulation/Multiple event simulation/Quality/Broward County, Florida/Calibration
ABSTR: SWMM application to South Florida Catchments using multiple single-event calibration prior to continuous simulation. The multiple event calibration tends to be robust.
137. Marsalek, J., "Malvern Urban Test Catchment, Volume II," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 95, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1979.

KEY: Quality/SWMM/RUNOFF/Burlington, Ontario/Calibration/Urban runoff data

ABSTR: Additional data collection on Malvern catchment in 1974, 17 quantity events, 7 quality events. SWMM results were "fairly accurate."

138. Marsalek, J., "Data Collection, Instrumentation and Verification of Models," Proceedings of Conference on Modern Concepts in Urban Drainage, Toronto, Ontario, Canada-Ontario Agreement Conference Proceedings No. 5, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, March 1977, 173-200.
KEY: Urban runoff data/Instrumentation/Model comparison/SWMM/STORM/Calibration
ABSTR: Summary of data needs and techniques for model calibration and verification.
139. Marsalek, J., "Research on the Design Storm Concept," Technical Memorandum No. 33 (NTIS PB-291936), ASCE Urban Water Resources Research Program, ASCE, New York, NY, September 1978.
KEY: Design storm/SWMM/Burlington, Ontario/Detention storage
ABSTR: SWMM used to test various design storm options, including use of real storms from the Malvern catchment in Burlington.
140. Marsalek, J., "Testing of the Storm Water Management Model of the US EPA," Proceedings of EPA Conference on Environmental Modeling and Simulation, W.R. Ott, ed., EPA-600/9-76-016 (NTIS PB-257142), USEPA, Washington, DC, July 1976, 558-562.
KEY: SWMM/Urban runoff data/Calibration
ABSTR: Testing of original SWMM against data from 8 catchments. Comparisons include volumes, peaks and times to peaks. Good quantity results, poor quality results.
141. Marsalek, J., "Instrumentation for Field Studies of Urban Runoff," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 42, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1978.
KEY: Quality/Data/Instrumentation/Rainfall
ABSTR: Survey of instruments suitable for urban runoff studies.
142. Marsalek, J., "Malvern Urban Test Catchment, Volume I," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 57, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1977.
KEY: Urban runoff data/SWMM/Burlington, Ontario
ABSTR: Emphasis on data collection. Comparison of SWMM with measured data on residential catchment.
143. McPherson, M.B., "Urban Runoff Control Planning," EPA-600/9-78-035, USEPA, Washington, DC, October 1978.
KEY: Model comparison/Design storm/SWMM/STORM/Urban drainage/Rainfall

ABSTR: General coverage of urban runoff, especially on design storms and their problems.

144. McPherson, M.B., "Urban Mathematical Modeling and Catchment Research in the U.S.A.," Technical Memorandum No. IHP-1 (NTIS PB-260685), ASCE Urban Water Resources Research Program, ASCE, New York, NY, June 1975.
KEY: Model comparison/Urban runoff data/SWMM
ABSTR: Matches several US models with US catchments where they have been applied.

145. Medina, M.A., Jr., "A Simplified Continuous Receiving Water Quality Model," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, May 4-5, 1978, EPA-600/9-78-019 (NTIS PB-285993/2BE), USEPA, Washington, DC, July 1978, 170-204.
KEY: Theory/RECEIV/Receiving water/Quality/Frequency analysis
ABSTR: Level III Receive is described for quasi-continuous simulation of stream water quality. Output results in concentration-frequency plots.

146. Meinholz, T.L., Hansen, C.A. and Novotny, V., "An Application of the Storm Water Management Model," Proceedings, National Symp. on Urban Rainfall and Runoff and Sediment Control, Report UKY BU106, University of Kentucky, Lexington, October 1974, 109-113.
KEY: SWMM/Combined sewer/Racine, WI/Case study/Quality
ABSTR: Paper discusses the application of the SWMM to a combined sewer area of 832 acres which has its wet weather discharges treated by 2 satellite screening/dissolved air flotation units totalling 93 cfs in capacity.

147. Metcalf and Eddy Inc., University of Florida and Water Resources Engineers Inc., "Storm Water Management Model, Volume I -- Final Report," EPA Report 11024DOC07/71 (NTIS PB-203289), USEPA, Washington, DC, July 1971.
KEY: SWMM/Documentation/Theory/Flow routing/Buildup/Washoff
ABSTR: Documentation of original theory and algorithms for all parts of model. Still pertinent to SWMM version III in parts.

148. Metcalf and Eddy Inc., University of Florida and Water Resources Engineers Inc., "Storm Water Management Model, Volume II -- Verification and Testing," EPA Report 11024DOC08/71 (NTIS PB-203290), USEPA, Washington, DC, August 1971.
KEY: SWMM/Calibration/Cincinnati, OH/San Francisco, CA/Washington, DC/Philadelphia, PA/Documentation
ABSTR: Calibration and verification of original SWMM in four cities.

149. Metcalf and Eddy Inc., University of Florida and Water Resources Engineers Inc., "Storm Water Management Model, Volume III -- User's Manual," EPA Report 11024DOC09/71 (NTIS PB-203291), USEPA, Washington, DC, September 1971.
KEY: SWMM/User's manual/Documentation

ABSTR: Original SWMM user's manual. Not applicable for SWMM version III.

150. Metcalf and Eddy Inc., University of Florida and Water Resources Engineers Inc., "Storm Water Management Model, Volume IV -- Program Listing," EPA Report 11024DOC10/71 (NTIS PB-203292), USEPA, Washington, DC, October 1971.
KEY: SWMM/Documentation/Fortran
ABSTR: Listing of original Fortran code. Superseded by SWMM versions II and III.
151. Morioka, T., "Role of Stormwater Runoff Model for Evaluation of Drainage System Alternatives," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 3, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296, Goteborg, Sweden, June 1984, 1291-1300.
KEY: Model comparison/Japan/Quality/SWMM/STORM
ABSTR: Comparison of model capabilities. No data.
152. Motchkavitz, R.J., "Drainage System Design and Analysis of the Tampa Palms Property," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876), USEPA, Washington, DC, March 1980, 263-285.
KEY: Tampa, FL/Urban drainage/STORM/SCS/Detention storage/Case study/Design storm
ABSTR: The SCS TR-20 program is used for drainage design.
153. Murrey, M.P.H., "Storage as a Strategy for the Management of Stormwater from Residential Areas," Master of Applied Science Thesis, Dept. of Civil Engineering, University of Toronto, Ontario, 1975.
KEY: Mississauga, Ontario/Model comparison/Urban drainage/STORAGE-TREATMENT/STORM/SWMM
ABSTR: Behavior of a siltation basin-reservoir system is examined by SWMM and an appended version of STORM
154. Murrey, M.P.H. and Ganczarczyk, J.J., "Storage for Storm Water Quality Control -- Meadowvale Test Site Study," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 63, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1977.
KEY: SWMM/STORM/RUNOFF/Storage-treatment/Urban runoff data/Mississauga, Ontario
ABSTR: Application of SWMM and STORM to predict inflow quantity and quality to reservoir. Comparison with data for new town of Meadowvale (in Mississauga).
155. Nakamura, E., "Water Quality of Urban Runoff from Impervious Areas," Unpublished report, Dept. of Civil Engineering, University of Illinois, Urbana, April 1983.
KEY: SWMM/Quality/Washoff

ABSTR: Study of the washoff equation and coefficients.

156. Nakamura, E., "Factors Affecting the Removal Rate of Street Surface Contaminants by Overland Flow," Journal of Research, Public Works Research Institute, Vol. 24, Ministry of Construction, Japan, November 1984.
KEY: SWMM/Quality/Washoff
ABSTR: Study of SWMM washoff equation and coefficients. Laboratory and field data using NaCl.
157. Nakamura, E., "Factors Affecting Stormwater Quality Decay Coefficient," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 3, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 979-988.
KEY: Quality/Buildup/Washoff/SWMM/Data/Theory
ABSTR: Use of data to estimate washoff parameters.
158. Niemczynowicz, J., "Investigation of the Areal and Dynamic Properties of Rainfall and its Influence on Runoff-Generating Processes," Report No. 1005, Dept. of Water Resources Engineering, Lund Institute of Technology, Lund, Sweden, December 1984.
KEY: Rainfall/Kinematic storms/SWMM/Lund, Sweden
ABSTR: SWMM is used briefly to investigate effects of spatially varying rainfall and moving storms.
159. Niemczynowicz, J., "An Attempt to Implement SWMM in Tunisia," Proceedings of Stormwater and Water Quality Model Users Group Meeting, January 27-28, 1983, EPA-600/9-83-015, USEPA, Athens, GA, September 1983, 43-52.
KEY: Tunis, Tunisia/SWMM/RUNOFF/TRANSPORT/Data/Case study
ABSTR: Application of SWMM to unusual urban and desert conditions.
160. Niemczynowicz, J., "Areal Rainfall - An Improved Input for Modeling of Runoff," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 1, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 335-344.
KEY: SWMM/RUNOFF/Kinematic storms/Rainfall/Lund, Sweden
ABSTR: Effect of spatial variation of rain on simulation
161. Niemczynowicz, J. and Hogland, W., "Experiences from Stormwater Modeling in Tunis," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 2, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 585-593.
KEY: SWMM/RUNOFF/TRANSPORT/Tunis, Tunisia/Case study
ABSTR: SWMM application in unusual urban conditions.

162. Nix, S.J., "Analysis of Storage/Release Systems in Urban Stormwater Quality Management," Ph.D. Dissertation, Dept. of Environmental Engineering Sciences, University of Florida, Gainesville, 1982.
KEY: SWMM/STORAGE-TREATMENT/Statistical method/Costs/Optimization/SYNOP
ABSTR: Comparison of methods for optimization of storage-treatment systems. Description of basis of S/T algorithms in SWMM version III.
163. Nix, S.J., Heaney, J.P. and Huber, W.C., "Revised SWMM Storage/Treatment Block," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, November 13-14, 1978, EPA-600/9-79-003 (NTIS PB-290742/6BE), USEPA, Washington, DC, November 1978, 1-27.
KEY: Theory/STORAGE-TREATMENT/SWMM/Detention storage/Quality/Documentation
ABSTR: The theory behind the new S/T block is described including Puls routing, complete mixing, plug flow, removal equations, sedimentation theory and cost equations.
164. Nix, S.J., Heaney, J.P. and Huber, W.C., "Water Quality Benefits of Detention," in Urban Stormwater Management, H.G. Poertner, ed., Special Report No. 49, American Public Works Association, Chicago, IL, 1981, 222-238.
KEY: Detention storage/SWMM/STORAGE-TREATMENT/Statistical method/Data
ABSTR: Comparison of methods for evaluation of storage-treatment effectiveness.
165. Nix, S.J., Heaney, J.P. and Huber, W.C., "Analysis of Storage/Release Systems in Urban Stormwater Quality Management: A Methodology," Proceedings, International Symposium on Urban Hydrology, Hydraulics and Sediment Control, Report UKY BU131, University of Kentucky, Lexington, July 1983, 19-29.
KEY: Detention storage/SWMM/STORAGE-TREATMENT/Optimization/Costs/Statistical method
ABSTR: Methods for determining optimal (least cost) storage- treatment combinations are described, with SWMM S/T as basis for comparison.
166. Noh, M., "Evaluation of Risk-Based Optimization Models of Sewer System Design," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 2, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 685-694.
KEY: Model comparison/SWMM/ILLUDAS/UCURM
ABSTR: Hypothetical catchment used to compare models.
167. Nunno, T.J., "Application and Testing of Stormwater Modeling Technology," Unpublished masters project report, Dept. of Civil Engineering, University of Massachusetts, Amherst, 1978.
KEY: SWMM/RUNOFF/TRANSPORT/Case study/Greenfield, MA/Quality/Urban runoff data
ABSTR: Application of SWMM version II to Maple Brook catchment in

Greenfield.

168. O'Brien and Gere Engineers Inc., "Phase I Combined Sewer Overflow Study — Potomac-Anacostia River System," Report to D.C. Dept. of Environmental Services, 1979.
KEY: SWMM/EXTRAN/Combined sewer/Washington, DC/Case study
ABSTR: Application of EXTRAN in Washington, DC.
169. Orlob, G.T., "Planning a Study Using Storm Water Management Models," Short Course Proceedings: Applications of Stormwater Management Models, August 19-23, 1974, University of Massachusetts, Amherst., EPA-670/2-75-065 (NTIS PB-247163), USEPA, Cincinnati, OH, June 1975, 269-279.
KEY: Urban drainage/Model comparison/SWMM
ABSTR: General guidelines and modeling options.
170. Orlob, G.T., "Selected Case Studies Using Stormwater Management Models — Quantity Aspects," Short Course Proceedings: Applications of Storm Water Management Models, August 19-23, 1974, University of Massachusetts, Amherst, EPA-670/2-75-065 (NTIS PB-247163), USEPA, Cincinnati, OH, June 1975, 250-268.
KEY: Model comparison/SWMM/Case studies/Baltimore, MD/Seattle, WA/Hamburg, Germany/Melbourne, Australia/EXTRAN
ABSTR: Investigations of Northwood Tract, Baltimore, Maryland; Pegel T1/T2, Hamburg, Germany; View Ridge, Seattle, Washington; Vine Street, Melbourne, Australia; and a special study of stability problems are used to illustrate applications of SWMM.
171. Papadakis, C.N. and Preul, H.C., "Methods for Determination of Urban Runoff," Journal Hydraulics Division, ASCE, Vol. 99, No. HY9, September 1973, 1319-1335.
KEY: Model comparison/UCURM/SWMM/RRL/Cincinnati, OH/Chicago, IL
ABSTR: A brief outline of various methods developed for the calculation of urban stormwater runoff is presented. The Chicago Method, the Road Research Laboratory Method, the EPA SWMM, and the University of Cincinnati Urban Runoff Model are tested in three urban watersheds: Chicago 10-acre tract, Oakdale 12.9-acre drainage area, and Bloody Run 2380-acre urban watershed.
172. Parker, W.M. III, "The Use of SWMM to Economically Model Surcharged Combined Sewer Systems," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876), USEPA, Washington, DC, March 1980, 111-131.
KEY: Skokie, IL/Surcharging/EXTRAN/SWMM/Case study
ABSTR: Application of EXTRAN.
173. Perks, A.R., "A Review of Urban Runoff Models," Proceedings of Conference on Modern Concepts in Urban Drainage, Toronto, Ontario, Canada-Ontario Agreement Conference Proceedings No. 5, Training and Technology Transfer Division (Water), Environment Canada, Ottawa,

Ontario K1A 1C8, March 1977, 159-172.

KEY: Model comparison/SWMM/STORM/ILLUDAS/MITCAT

ABSTR: Model comparison using a table and brief summary of selected models.

174. Perks, A.R., "The Development of Storm Drainage Modelling in Canada," Urban Storm Drainage, Proceedings of the First International Conference, Southampton, P.R. Helliwell, ed., Pentech Press, London, April 1978, 362-377.
KEY: SWMM/Snowmelt/Ontario
ABSTR: Adaptation of SWMM for Canada.
175. Perks, A.R., "Stormwater Modeling Applications," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, November 13-14, 1978, EPA-600/9-79-003 (NTIS PB-290742/6BE), USEPA, Washington, DC, November 1978, 39-49.
KEY: SWMM/EXTRAN/ILLUDAS/HYMO/Ontario/Case studies/Surcharging
ABSTR: Brief description of modeling case studies in Ontario.
176. Perks, A.R. and Cheung, P.W., "Application of SWMM-EXTRAN to a Coastal Flooding Situation," Proceedings of Conference on Stormwater and Water Quality Management Modeling, Burlington, Ontario, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario L8S 4L7, September 1984, 21-37.
KEY: SWMM/EXTRAN/Saint John, New Brunswick/Tide gates/Hydraulics/Detention storage
ABSTR: Example of use of Extran for flooding situations. Shows how to simulate storage using trapezoidal element.
177. Perry, J.D., Finn, T.P. and Maguire, C.E., "Hydraulic Modeling with SWMM in an Unsteady Pressure Flow Regime," Proceedings of Stormwater and Water Quality Model Users Group Meeting, April 12-13, 1984, EPA-600/9-85-003, USEPA, Athens, GA, January 1985, 31-46.
KEY: SWMM/RUNOFF/EXTRAN/Norfolk, VA/Case study/Sensitivity analysis/Flood control
ABSTR: SWMM version III RUNOFF and EXTRAN blocks were applied to the 480 acre Monticello basin in Norfolk. Problems with EXTRAN included continuity balances, errors with rectangular conduits and specification of initial junction water depths.
178. Ports, M.A., "Computer Keeps New Orleans' Head Above Water," Civil Engineering, ASCE, Vol. 55, No. 8, August 1985, 56-58.
KEY: New Orleans, LA/Flood control/Design storm/SWMM/EXTRAN/Case study
ABSTR: SWMM is used to simulate the drainage system in New Orleans and aid in the evaluation of upgrading the system.
179. Proctor and Redfern Ltd. and James F. MacLaren Ltd., "Storm Water Management Model Study, Volume II," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 48, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A

1C8, September 1976.

KEY: SWMM/Documentation/Snowmelt/Theory/Quality/Data base/Storage-treatment

ABSTR: Supplementary technical material on snowmelt, snowmelt quality, urban runoff quality, data sources and storage- treatment.

180. Proctor and Redfern Ltd. and James F. MacLaren Ltd., "Storm Water Management Model Study, Volume I," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 47, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, September 1976.

KEY: SWMM/Documentation/Theory/Model comparison/Case studies/Snowmelt/Subcatchment aggregation/Sensitivity analysis/Data base

ABSTR: Adaptation of SWMM for Canada, including development of snowmelt routines.

181. Proctor and Redfern Ltd. and James F. MacLaren Ltd., "Storm Water Management Model Study, Volume III, User's Manual," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 62, Training and Technology Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1977.

KEY: SWMM/User's manual/Documentation/Snowmelt

ABSTR: User's manual for the Canadian SWMM version. Documentation of most procedures is given in volumes I and II.

182. Prosser, R.T. and Shapiro, H.M., "Use of the Hydrological Engineering Center Storage, Treatment, Overflow Runoff Model - 'STORM' for Sewer Inflow Removal/Treatment Cost Effective Analyses in Three Selected Localities," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, May 4-5, 1978, EPA-600/9-78-019 (NTIS PB-285993/2BE), USEPA, Washington, DC, July 1978, 205-223.

KEY: Webster, NY/Interlaken, NY/Canadaigua,

NY/Infiltration/STORM/Costs/Controls

ABSTR: Infiltration-inflow analysis.

183. Robinson, M.A. and James, W., "Continuous SWMM Quality Modeling Using Environment Canada Data Files," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, L8S 4L7, September 1981, 469-492.

KEY: Theory/RUNOFF/SWMM/Continuous simulation/Fortran/Quality/Regression analysis/Urban runoff data/Hamilton, Ontario

ABSTR: SWMM is used to derive simpler loading estimates for assessing receiving water response.

184. Robinson, M.A. and James, W., "Chedoke Creek Flood Storage Computed by Continuous SWMM and Dynamic Storms," Report No. R124, Computational Hydraulics Inc., Hamilton, Ontario, December 1984.
KEY: SWMM/Continuous simulation/Hamilton, Ontario/Kinematic storms/STORAGE-TREATMENT/Sediment/Scour-deposition/Urban runoff data
ABSTR: Application of SWMM for design in an urban area.

185. Robinson, M.A. and James, W., "Co-ordinated Multiprocessing for Real-time Control of Urban Drainage," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, January 19-20, 1981, Austin, TX, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario L8S 4L7, January 1981, 119-140.
KEY: Instrumentation/SWMM/RUNOFF/Sensitivity analysis/Rainfall/Quality/Real-time control/Combined sewer/Controls/Hamilton, Ontario
ABSTR: Describes integration of instrumentation, data management and modeling for real-time control of CSO.

186. Robinson, M.A. and James, W., "Continuous Variable Resolution Stormwater Modelling on a Microcomputer," Proceedings of Conference on Stormwater and Water Quality Management Modeling, Burlington, Ontario, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario L8S 4L7, September 1984, 59-73.
KEY: SWMM/Continuous simulation/Microcomputers/Variable time step/IBM-PC
ABSTR: Use of variable time step for continuous simulation.

187. Robinson, M.A. and James, W., "Rainfall Data Acquisition and Processing Using Apple II Workalikes," Proceedings of Stormwater and Water Quality Model Users Group Meeting, April 12-13, 1984, EPA-600/9-85-003, USEPA, Athens, GA, January 1985, 205-216.
KEY: Rainfall/Instrumentation/Microcomputers/Apple/Hamilton, Ontario
ABSTR: Use of microcomputers for analysis of short-time-increment raingage data.

188. Robinson, M.A. and James, W., "Simulation of Urban Drainage for Hamilton using Coordinated Multi-Processing," Urban Stormwater Quality, Management and Planning, B.C. Yen, ed., Second International Conference on Urban Storm Drainage, University of Illinois, Urbana, IL, Water Resources Publications, Ft. Collins, CO, June 1981, 398-405.
KEY: SWMM/Hamilton, Ontario/Real-time control/Microcomputers/Rainfall
ABSTR: Real-time collection of hydrologic data for real-time control is discussed.

189. Roesner, L.A., Kassem, A.M. and Wisner, P.E., "Improvements in Extran," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876), USEPA, Washington, DC, March 1980, 132-141.
KEY: Theory/EXTRAN/SWMM/Documentation/Fortran

ABSTR: Program improvements to EXTRAN are described.

190. Roesner, L.A., Kibler, D.F. and Monser, J.R., "Use of Storm Drainage Models in Urban Planning," Proceedings, National Symposium on Watersheds in Transition, American Water Resources Association and Colorado State University, Fort Collins, June 1972, 400-405.
KEY: SWMM/San Francisco, CA/Quality/Combined sewer
ABSTR: Describes application of original SWMM to Selby Street catchment in San Francisco. Shows effect on quality of alternative land uses.
191. Roesner, L.A., Shubinski, R.P. and Aldrich, J.A., "Storm Water Management Model User's Manual, Version III: Addendum I EXTRAN," EPA-600/S2-84-109b (NTIS PB84-198431), USEPA, Cincinnati, OH (also available from Dept. of Environmental Engineering Sciences, University of Florida, Gainesville), November 1981.
KEY: SWMM/EXTRAN/User's Manual/Documentation/Theory/Flow routing/Hydraulics/Fortran
ABSTR: User's manual for EXTRAN.
192. Rowney, A.C., Anderson, J.C. and Perks, A.R., "Modelling Applications Using QUAL-II and STORM," Proceedings, Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, September 28-29, 1981, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, McMaster University, Hamilton, Ontario, L8S 4L7, September 1981, 333-344.
KEY: Ottawa, Ontario/Receiving water/Quality/STORM/QUAL-II/Rideau River
ABSTR: The impact of stormwater on river quality is assessed using STORM linked to QUAL-II.
193. Sarikelle, S., Chien, J.-S. and French, G.L., "Linearized Subhydrographs Urban Runoff Model," Proceedings of Hydraulics Division Specialty Conference on Verification of Mathematical and Physical Models in Hydraulic Engineering, College Park, MD, ASCE, New York, NY, August 1978, 783-790.
KEY: Model comparison/SWMM/RUNOFF/Toronto, Ontario/Burlington, Ontario
ABSTR: A simplified model, SUBHYD, is compared to SWMM Runoff block using data from Burlington and Toronto.
194. Schultz, N.U. and Gagnon, G.A., "Milwaukee's Integrated Modeling Approach to Water Quality and Sewer System Analysis," Proceedings of Stormwater and Water Quality Model Users Group Meeting, April 12-13, 1984, EPA-600/9-85-003, USEPA, Athens, GA, January 1985, 1-18.
KEY: SWMM/STORM/HSPF/SAM/Milwaukee, WI/Detention storage/Regression analysis/Receiving water/Hydraulics/Model comparison
ABSTR: Use of several models is described for overall analysis of Milwaukee's sewer system and receiving water impacts.

195. Schultz, N.U. and Videkovich, R.M., "Using Models to Evaluate Alternatives for Surcharged Sewers," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 160-174.
KEY: Milwaukee, WI/Surcharging/SWMM/SAM/Model comparison
ABSTR: The Sewer Analysis Model (SAM) is used for analysis of surcharging.
196. Shapiro, H.M., Blenk, J.B. and Allen, M.P., "CSO Impact Determination by Long Term Simulation," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876, USEPA, Washington, DC, March 1980, 142-189.
KEY: Elmira, NY/Combined sewer/STORM/Continuous simulation/Frequency analysis/WQRSS/Quality
ABSTR: STORM is used to develop CSO BOD loads and their frequency relationships. STORM loads then serve as input to WQRSS for the stream response.
197. Sharon, J.D., "CSO Facilities Planning in Cincinnati Using SWMM (A Case Study)," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, November 13-14, 1978, EPA-600/9-79-003 (NTIS PB-290742/6BE), USEPA, Washington, DC, November 1978, 147-189.
KEY: Cincinnati, OH/SWMM/RUNOFF/TRANSPORT/Combined sewer/Case study/Calibration/Sensitivity analysis/Urban runoff data/Quality
ABSTR: A detailed SWMM example is presented for CSO control in Cincinnati.
198. Shiferaw, M., "The Influence of Input Data on the Accuracy of Simulation," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 2, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden/Model comparison, June 1984, 615-624.
KEY: Design storm/SWMM/NIVA/Model comparison/Rainfall
ABSTR: Comparison of output from various design storms.
199. Shivalingaiah, B. and James, W., "Atmospheric and Land-Based Loadings for Storm Water Runoff Quality Models," International Symposium on Urban Hydrology, Hydraulics and Sediment Control, University of Kentucky, Lexington, July 1983, 115-121.
KEY: SWMM/RUNOFF/Buildup/Washoff/Quality/Loadings
ABSTR: Development of deterministic method for predicting pollutant loadings.
200. Shivalingaiah, B. and James, W., "Algorithms for Buildup, Washoff and Routing Pollutants in Urban Runoff," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 4, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296, Goteborg, Sweden, June 1984, 1445-1455.

KEY: SWMM/RUNOFF/Quality/Buildup/Washoff
ABSTR: Revised quality algorithms.

201. Shivalingaiah, B. and James, W., "Atmospheric Pollution in Relation to Stormwater Quality Modelling; Literature Review for an Industrial City," Proceedings of the Conference on Storm Water and Water Quality Management Modelling, EPA-600/9-82-015 (NTIS PB83-145540), USEPA, Athens, GA, March 1982, 274-295.
KEY: SWMM/Quality/Buildup/Loadings/RUNOFF
ABSTR: Use of air pollution data to predict buildup of pollutants.
202. Shivalingaiah, B., Robinson, M.A. and James, W., "Enhancements to SWMM3 Runoff Quality Algorithms," Proceedings of the Conference on Stormwater and Water Quality Management Modelling, Montreal, Quebec, Rapport GREMU-83/03, Dept. Genie Civil, Ecole Polytechnique, Montreal, Quebec, H3C 3A7, November 1983, 64-74.
KEY: SWMM/RUNOFF/Quality/Buildup/Washoff/Theory
ABSTR: Modifications to SWMM buildup-washoff equations.
203. Shubinski, R.P. and Fitch, W.N., "Urbanization and Flooding -- An Example," Proceedings of EPA Conference on Environmental Modeling and Simulation, W.R. Ott, ed., EPA-600/9-76-016 (NTIS PB-257142), USEPA, Washington, DC, July 1976, 69-73.
KEY: STORM/SWMM/EXTRAN/Four Mile Run, VA/Design storm
ABSTR: Coupling of screening model (STORM) with detailed hydraulic model (SWMM-EXTRAN) for flood control application.
204. Singer, S.W. and So, S.K., "Characterization, Magnitude and Impact of Urban Runoff in the Grand River Basin," Proceedings, Stormwater Management Model (SWMM) Users Group Meeting, June 19-20, 1980, EPA-600/9-80-064 (NTIS PB81-173858), USEPA, Athens, GA, December 1980, 80-120.
KEY: Grand River Basin, Ontario/STORM/Quality/Loadings/Receiving water/Data
ABSTR: Overall water quality study of Grand River Basin.
205. Smith, G.F., "Adaptation of the EPA Storm Water Management Model for Use in Preliminary Planning for Control of Urban Storm Runoff," ME Thesis, Dept. of Environmental Engineering Sciences, University of Florida, Gainesville, 1975.
KEY: SWMM/Continuous simulation/Subcatchment aggregation/STORAGE-TREATMENT/Atlanta, GA/Washington, DC
ABSTR: Modification of SWMM for continuous simulation, with emphasis on S/T block and effects of subcatchment aggregation.
206. Smolenyak, K., "Stormwater Runoff Modelling of the Tampa Palms Property," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876), USEPA, Washington, DC, March 1980, 243-262.
KEY: Tampa, FL/Urban drainage/STORM/Detention storage/Storage-

treatment/Quality/Controls/Loadings

ABSTR: STORM is used to derive flows and loadings for a planned development.

207. Sonnen, M.B., "Abatement of Deposition and Scour in Sewers," EPA-600/2-77-212 (NTIS PB-276585), USEPA, Cincinnati, OH, November 1977.
KEY: SWMM/EXTRAN/Scour-deposition/Quality/Sediment
ABSTR: Adaptation of EXTRAN for scour-deposition simulation.
208. Stirrup, M. and James, W., "Real Time Control of Combined Sewer Overflow Using On-Site Microcomputers," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 4, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296, Goteborg, Sweden, June 1984, 1457-1464.
KEY: SWMM/Microcomputers/Combined sewer/Real-time control/Hamilton, Ontario
ABSTR: Composite model for CSO control.
209. Stirrup, M. and James, W., "Using a Timex-Sinclair 1000 Microcomputer for Real-Time Control of Combined Sewer Overflows," Proceedings of Stormwater and Water Quality Model Users Group Meeting, April 12-13, 1984, EPA-600/9-85-003, USEPA, Athens, GA, January 1985, 19-30.
KEY: Microcomputers/Real-time control/SWMM/Combined sewer/Hamilton, Ontario/Instrumentation
ABSTR: SWMM version III is used to develop a simple Box-Jenkins transfer function for operation of a downstream regulator based on upstream conditions. The Timex-Sinclair 1000 microcomputer records and transmits the upstream data and another operates the downstream regulator. The needed equipment is very inexpensive and is reliable.
210. Sueishi, T., "Comparison Among Models for Storm Water and Pollutants Runoff in View of their Reliability, Sensitivity and Applicability," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 2, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 605-614.
KEY: SWMM/STORM/Buildup/Washoff/Quality/Kusatsu City, Japan/Suita City, Japan
ABSTR: Comparison of quality algorithms.
211. Torno, H.C., "Model Application in EPA Planning Programs," Preprint 3526, ASCE Convention and Exposition, Boston, ASCE, New York, NY, April 1979.
KEY: Model comparison/SWMM/STORM/HSPF/ILLUDAS/Chicago, IL/San Francisco, CA/Toronto, Ontario
ABSTR: Brief description of model application to urban areas.
212. Torno, H.C., "Storm Water Management Model: Transfer of Technology," Water Knowledge Transfer, Proceedings of the Second International Conference on Transfer of Water Resources Knowledge, Vol. 2, N.S.

Grigg et al., eds., Water Resources Publications, Fort Collins, CO, 1978, 587-591.

KEY: Dissemination/SWMM/Model comparison/Documentation

ABSTR: "Effective technology transfer program has been central to its [SWMM's] continued popularity with engineers and planners in both the public and private sectors."

213. Torno, H.C., "A Model for Assessing Impact of Stormwater Runoff and Combined Sewer Overflows and Evaluating Pollution Abatement Alternatives," Water Research, Vol. 9, 1975, 1-3.
KEY: SWMM/Documentation
ABSTR: Description of original SWMM model.
214. U.S. Environmental Protection Agency, "EPA Environmental Data Base and Model Directory," Two volumes, EPA Information Clearinghouse (PM 211A), Washington, DC 20460, July 1983.
KEY: Model comparison/SWMM
ABSTR: Summaries of all EPA models, including water quality, air quality, surface runoff, streamflow, hazardous waste, noise, BMPs etc.
215. Unal, A. and James, W., "SWMM3 Program Measurement for Optimal Use on a Personal Microcomputer Network," Proceedings of the Stormwater and Water Quality Modelling Conference, Burlington, Ontario, USEPA, and Ontario Ministry of Environment, Dept. of Civil Engineers, McMaster University, Hamilton, Ontario L8S 4L7, September 1984, 101-110.
KEY: SWMM/Microcomputers/Fortran/Local area network/Time series/Instrumentation
ABSTR: Networking of instrumentation and computers.
216. Unal, A. and James, W., "Centralised Time Series Management Programs For Continuous SWMM3 on Personal Microcomputers," Proceedings of the Stormwater and Water Quality Modelling Conference, Burlington, Ontario, USEPA, and Ontario Ministry of Environment, Dept. of Civil Engineers, McMaster University, Hamilton, Ontario L8S 4L7, September 1984, 91-100.
KEY: SWMM/Time series/Microcomputers/Data base management
ABSTR: Management of hydrologic time series for SWMM input and output.
217. Urban Drainage Subcommittee, "Report of the Urban Drainage Subcommittee Projects Conducted 1972-1978," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 101, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1980.
KEY: Project summaries/Urban drainage/Case studies
ABSTR: Summaries of completed and ongoing studies under the Canada-Ontario agreement. Summaries of all COA reports through no. 100.
218. Urban Drainage Subcommittee, "Proposed Model Policies for Urban Drainage Management," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 102, Training and Technology Transfer

Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1980.
KEY: Urban drainage/Controls/Costs/Combined sewer
ABSTR: General guidelines for urban drainage.

219. Urban Drainage Subcommittee, "Manual of Practice for Urban Drainage," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 104, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1980.
KEY: Urban drainage/Project summaries/Urban runoff data/Model comparison/SWMM/STORM
ABSTR: Review of urban drainage practices, data and modeling in Canada.
220. Vittands, J.P., "Three Case Studies on the Application of the Storm Water Management Model," Short Course Proceedings: Applications of Storm Water Management Models, August, 1974, University of Massachusetts, EPA-670/2-75-065 (NTIS PB-247163), USPEA, Cincinnati, OH, June 1975, 280-332.
KEY: SWMM/Case studies/Cleveland, OH/Middletown, OH/Boston, MA
ABSTR: Original SWMM applied to: Easterly District of Cleveland, Ohio; Great Miami River in Middletown, Ohio; and Metropolitan Boston Areas.
221. Waller, D.H. and Coulter, W.A., "Winter Runoff from an Urban Catchment (January to March 1974)," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 41, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, 1977.
KEY: Snowmelt/Urban runoff data/Halifax, Nova Scotia/Quality
ABSTR: Winter runoff from a 163 ac. combined sewer area in Halifax.
222. Waller, D.H., Coulter, W.A., Carson, W.M. and Bishop, D.G., "Urban Drainage Model Comparison for a Catchment in Halifax, Nova Scotia," Canada-Ontario Agreement on Great Lakes Water Quality, Research Report No. 43, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, August 1976.
KEY: SWMM/RRL/RUNOFF/Model comparison/Halifax, Nova Scotia/Urban runoff data
ABSTR: Model comparisons using a 167.2 ac combined sewer area.
223. Water Resources Engineers Inc., "Urban Runoff and Basin Drainage Study — Green and Cedar River Basins of Washington, Draft Report," Report to U.S. Army Corps of Engineers, Seattle District, RIBCO, and Metropolitan Seattle, July 1974.
KEY: SWMM/EXTRAN/Case study/Seattle, WA
ABSTR: Application of EXTRAN in Seattle.
224. Water Resources Engineers Inc., "Four Mile Run Watershed Runoff Control Program," Report to the Northern Virginia Planning District Commission, December 1976.

KEY: SWMM/EXTRAN/Four Mile Run, VA/Case study
ABSTR: Application of EXTRAN

225. Wetzel, E.D. and Johnson, R.L., "Alteration of EPA's SWMM for Use on a CDC 6400," Fritz Engineering Laboratory Report 416.1, Lehigh University, Bethlehem, PA, December 1976.

KEY: SWMM/CDC/Fortran

ABSTR: Contains alterations to Fortran code necessary to convert to CDC computer from IBM.

226. Whipple, W., Jr., Hunter, J.V. and Yu, S.L., "Effects of Storm Frequency on Pollution from Urban Runoff," Journal Water Pollution Control Federation, Vol. 49, No. 11, November 1977, 2243-2248.

KEY: SWMM/Buildup/Washoff/Data/Saddle River, NJ/Receiving water

ABSTR: Criticism of linear buildup rate in original SWMM model. See also discussion of this article in JWPCF, Vol. 50, No. 5, May 1978, pp. 974-982.

227. Wisner, P.E., "Experience with the Implementation of Storm Water Management Models," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 2, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 467-474.

KEY: OTTSWMM/IMPSWM/Ottawa, Ontario/SWMM/Model comparison

ABSTR: Describes IMPSWM program at the University of Ottawa.

228. Wisner, P.E., "A Hierarchical Approach to Urban Hydrologic Modeling: The IMPSWM Methodology," Proceedings, International Symposium on Urban Hydrology, Hydraulics and Sediment Control, Report UKY BU131, University of Kentucky, Lexington, July 1983, 31-38.

KEY: SWMM/OTTSWMM/OTTHYMO/IMPSWM/Urban drainage/EXTRAN

ABSTR: Description of a group of programs at the University of Ottawa for urban drainage analysis, including SWMM.

229. Wisner, P.E., "Application of Computer Models for Storm Water Management," Proceedings of Conference on Modern Concepts in Urban Drainage, Toronto, Ontario, Canada-Ontario Agreement Conference Proceedings No. 5, Training and Technology Transfer Division (Water), Environment Canada, Ottawa, Ontario K1A 1C8, March 1977, 201-219.

KEY: Model comparison/SWMM/STORM/EXTRAN/Winnipeg, Manitoba/Edmonton, Alberta

ABSTR: Describes a few applications of models currently used in Canada, along with specific model deficiencies.

230. Wisner, P.E., "The IMPSWM Procedures for Urban Drainage Modelling and Some Applications," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 225-248.

KEY: Theory/IMPSSW/SWMM/Case studies/Model comparison/OTTHYMO/OTTSWMM
ABSTR: Use of a collection of models under the IMPSSW program at the University of Ottawa is described.

231. Wisner, P.E., Kassem, A.M. and Cheung, P.W., "Comparison of Design Peak Flows Calculated by the Rational Method and the EPA-SWMM Model," Proceedings Stormwater Management Model SWMM Users Group Meeting, January 10-11, 1980, EPA-600/9-80-017 (NTIS PB80-177876), USEPA, Washington, DC, March 1980, 41-74.
KEY: SWMM/Model comparison/Rational method/Design storm/Rainfall
ABSTR: Comparison of SWMM vs. rational method using real and artificial data.
232. Wisner, P.E., Rampersad, C.A. and Lam, A., "Realistic Simulation of Sewer Surge and Prevention of Basement Flooding," Proceedings, Third International Conference on Urban Storm Drainage, Goteborg, Sweden, Vol. 1, Dept. Sanitary Engineering, Chalmers University of Technology, S-41296 Goteborg, Sweden, June 1984, 375-385.
KEY: Surcharging/SWMM/EXTRAN/OTTSWMM
ABSTR: Use of Extran to study basement flooding.
233. Wisner, P.E., Roake, A.F. and Ashamalla, A.F., "Application of STORM and SWMM for Assessment of Urban Drainage Alternatives in Canada," Proceedings of EPA Conference on Environmental Modeling and Simulation, W.R. Ott, ed., EPA-600/9-76-016 (NTIS PB-257142), USEPA, Washington, DC, July 1976, 563-567.
KEY: STORM/SWMM/EXTRAN/Model comparison/Urban drainage/Case studies
ABSTR: Use of urban runoff models in Canada and list of case study locations.
234. Wong, W.M. and Zukovs, G., "Evaluation of Inflow/Infiltration Controls for Stratford, Ontario," Proceedings Stormwater and Water Quality Management Modeling and SWMM Users Group Meeting, October 18-19, 1982, USEPA and Ontario Ministry of the Environment, Dept. of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4, October 1982, 249-274.
KEY: Stratford, Ontario/Infiltration/STORM/Dry-weather flow
ABSTR: STORM is used in an infiltration-inflow study.
235. Yen, B.C. and Sevuk, A.S., "Design of Storm Sewer Networks," Journal Environmental Engineering Div., ASCE, Vol. 101, No. EE4, August 1975, 535-553.
KEY: Model comparison/Storm water/SWMM/RRL/ISS/Hydraulics/Design/Surcharging
ABSTR: Five different methods for design of storm and combined sewers are compared by determining the size of the sewers of an example network. SWMM is found to be less accurate than Illinois Storm Sewer Systems Simulation (ISS) model.

236. Yin, T., "The Separation of Boundary Layer and Flow Turbulence of Center-Feed Circular Sedimentation Basins," Proceedings of Stormwater and Water Quality Management Modeling Users Group Meeting, March 25-26, 1982, EPA-600/9-82-015 (NTIS PB83-145540), USEPA, Athens, GA, August 1982, 152-161.
KEY: Theory/Storage-treatment/Sediment/Hydraulics
ABSTR: Sedimentation basin theory.
237. Zaghloul, N.A., "SWMM Model and Level of Discretization," Journal Hydraulics Division, ASCE, Vol. 107, No. HY11, November 1981, 1535-1545.
KEY: SWMM/RUNOFF/TRANSPORT/Subcatchment aggregation/Case studies/Calibration/Sensitivity analysis
ABSTR: The accepted level of discretization used for flow simulation over on urban area was investigated, and the effect of reducing the number of subcatchments or the accuracy of runoff simulation was studied using the original SWMM RUNOFF and TRANSPORT blocks. The SWMM simulation using coarse discretization will result in reducing data reduction and computer costs

TABLE 2. INDEX OF REFERENCES BY KEYWORDS

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APPENDIX A

ADDITIONAL SWMM BIBLIOGRAPHIC REFERENCES

The following references were received too late to be included in the primary bibliography listing or in the index of keywords.

1. Chow, I.B. and Danek, L.J., "Hydrodynamic and Water Quality Simulations in an Estuary with Multiple Ocean Boundaries," Proceedings of the Stormwater and Water Quality Model User's Group Meeting, EPA/600/9-85/016 (NTIS PB85-228302/AS), Environmental Protection Agency, Athens, GA, January 1985, pp. 157-178.
KEYWORDS: RECEIV/ Calibration/ Quality/ Case study/ Pungo River, NC/ Receiving water
2. Dickinson, R.E., Pandorf, W. and Danek, L.J., "Storm Water Management Model Application to a Peatlands Region in Coastal North Carolina," Proceedings of the Stormwater and Water Quality Model User's Group Meeting, EPA/600/9-85/016 (NTIS PB85-228302/AS), Environmental Protection Agency, Athens, GA, January 1985, pp. 60-86.
KEYWORDS: SWMM/ RUNOFF/ Calibration/ Case study/ North Carolina/ Drainage
3. Huber, W.C., "Deterministic Modeling of Urban Runoff Quality," Proceedings of the NATO Workshop on Urban Runoff Quality, Montpellier, France, Springer-Verlag Publishers (in press), August 1985.
KEYWORDS: Model comparison/ Quality/ SWMM/ HSPF/ QQS/ DR3M-QUAL/ FHWA/ STORM/ Buildup/ Washoff/ Scour-deposition/ Sediment/ Theory
4. James, W. and Boregowda, S., "Continuous Mass-Balance of Pollutant Build-up Processes," Proceedings of the NATO Workshop on Urban Runoff Quality, Montpellier, France, Springer-Verlag Publishers (in press), August 1985.
KEYWORDS: Quality/ SWMM/ Theory/ Buildup/ Washoff/ Continuous simulation/ Highways/ Hamilton, Ontario
5. James, W. and Robinson, M.A., "An Affordable Alternative to a Mainframe Computer Environment for Continuous Modeling," Proceedings of the Stormwater and Water Quality Model User's Group Meeting, EPA/600/9-85/016 (NTIS PB85-228302/AS), Environmental Protection Agency, Athens, GA, January 1985, pp. 13-30.
KEYWORDS: Continuous simulation/ SWMM/ Microcomputers/ IBM-PC/ Time series/ Data base management
6. Miracle, D.L., "Review of Existing Methods for Predicting Pollutant Loads from Highway Runoff," Master of Engineering Technical Report (unpublished),

Dept. of Environmental Engineering Sciences, University of Florida,
Gainesville, July 1985.

KEYWORDS: Quality/ Regression analysis/ Statistical method/ Model comparison/
SWMM/ STORM/ HSPF/ FHWA/ Highways

APPENDIX B

ADDITIONAL REFERENCES INCLUDED IN REPORT TEXT

1. Environmental Protection Agency, "EPA Environmental Data Base and Model Directory," Information Clearinghouse (PM 211A), Environmental Protection Agency, Washington, DC, July 1983.
2. Kibler, D.F., ed., Urban Stormwater Hydrology, Water Resources Monograph 7, American Geophysical Union, Washington, DC, 1982.
3. Kohlhaas, C.A., ed., "Compilation of Water Resources Computer Program Abstracts," U.S. Committee on Irrigation, Drainage and Flood Control, Denver, CO, 1982.
4. Office of Technology Assessment, U.S. Congress, "Use of Models for Water Resources Management, Planning, and Policy," U.S. Government Printing Office, Washington, DC, August 1982.
5. Viessman, W., Jr., Knapp, J.W., Lewis, G.L. and Harbaugh, T.E., Introduction to Hydrology, Second Edition, Harper and Row, New York, NY, 1977.
6. Whipple, W., Randall, C.W., Grigg, N.S., Shubinski, R.P., Grizzard, T. and Tucker, L.S., Stormwater Management in Urbanizing Areas, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1983.